3.0 PART I: HOSTILE ATtribution of INTENT AMONG AGGRESSIVE AND LESS AGGRESSive ADOLESCENTS

In the last decade, scientific attention to social information processing and behavioural decision making in adolescence has increased, particularly with respect to antisocial behaviour (e.g., Cauffman & Steinberg, 2000; Fried & Reppucci, 2001; Fontaine et al., 2009). The basic premise of social information processing model (Dodge, 1986; Crick & Dodge, 1994) and of other social cognitive models (e.g., Piaget 1932/1965; Turiel, 1998) is that individual's understanding and interpretation of situations influences their related behaviours. Social information processing theory offers a detailed model of how individuals process and interpret cues in a social situation and arrive at a decision that is more or less competent. There is a relationship between social information processing biases and aggression. Individuals who assume hostile attributions to peers’ ambiguous behaviours and generate aggressive, ineffective solutions to social problems are more overtly aggressive than peers without these patterns (Dodge, 1980; Dodge et al., 1990). Individual differences in aggression are attributed to a wide range of factors, one of which is Hostile Attribution of Intent (HAI), a unique social information processing pattern (Crick & Dodge 1994). Hostile attribution of intent is considered a significant predictor of aggression and an important element in the development of aggressive behaviour. Thus, HAI has become an important construct for explaining aggressive behaviour. It is the failure to make benign attribution. Aggressive individuals develop the assumption that negative social situations are caused by others’ hostile intent. It is this assumption that endures across time and guide aggressive behaviour. It is believed to cause aggressive behaviour, instigate more problematic social interaction (Weiss et al., 1992).

Part I of the present study aimed at exploring how aggressive individuals differ from less aggressive individuals in their level of HAI. This difference was also assessed for four
dimensions of aggression namely, anger, physical aggression, hostility and verbal aggression. Another variable which seems to be important in aggression and HAI is gender. Differences have been found out in aggressive behaviour of males and females in context of different types of aggression. Males have been reported to be high on physical aggression. On the other hand, females have been found to show more of indirect, verbal or relational aggression (Bettencourt et al., 2006). Thus, Part I tried to assess whether there are gender differences in HAI also. It has also been attempted in the present part of the study to investigate as to how do aggression and gender interact & what effect does this interaction have on HAI of the individuals.

3.1 Objectives

The specific objectives of Part I were to study:

1. the difference between aggressive and less aggressive individuals on HAI
2. the difference between individuals high and low on four dimensions of aggression (anger, physical aggression, hostility & verbal aggression) on HAI
3. gender differences in HAI.

3.2 Hypotheses

Based on the review of literature, following hypotheses were formulated.

1. Aggressive individuals would exhibit more HAI as compared to less aggressive individuals.
2. Individuals high on sub-dimensions of aggression i.e. anger, physical aggression, hostility & verbal aggression, would exhibit more HAI as compared to individuals low on these sub-dimensions.
3. Males would be higher on HAI as compared to females.
3.3 Method

3.3.1 Design
The design was 2X2 factorial (Aggression & Gender). There were two levels of aggression as well as its four dimensions (high & low), and two levels of gender (males & female). HAI was taken as the dependent variable.

3.3.2 Selection of Subjects
A total of 313 subjects (163 males and 150 females) with the mean age of 13.60 years (SD=1.03 years) were randomly selected from various public schools (English medium) of Patiala and Chandigarh (Punjab) after due consent of the respective principals and participants. Six public schools were randomly selected for inclusion in the study. One or two sections (two sections were selected in only two schools) of 8th & 9th standards were selected randomly from each school. This was done by making slips representing each section and drawing one or two, keeping equal probability of being selected for each section. Out of 313 participants, 250 participants (125 with high scores on aggression & 125 with low scores on aggression) were screened in with the help of Aggression Questionnaire (Buss & Perry, 1992). Both males and females were divided into two group i.e. ‘high on aggression’ group and ‘low on aggression’ group. For this purpose, scores on Aggression Questionnaire (Buss & Perry, 1992) were tabulated in descending order separately for males & females. From this tabulated list upper 40% individuals were put in ‘high on Aggression’ group and lower 40% were placed in ‘low on aggression group’. The mean score on aggression in ‘High on aggression’ group was found to be 104.84. Participants in ‘low on aggression’ group were found to have mean score of 75.58 on aggression. After categorizing all the participants into both groups, class in-charges and teachers, who were not aware of the status of participants on aggression, were asked to assign
all participants either in ‘high on Aggression’ or in ‘low on aggression’ group according to their classroom behaviour and previous aggressive acts including verbal, physical and hostile form of aggression. This classification closely matched with the classification done on the basis of scores on aggression questionnaire. In the classification, teachers assigned 139 out of total 313 individuals to ‘high on Aggression’ group. Among these 139 individuals, 118 individuals match with the questionnaire based classification. This exercise was done to confirm the categorization and it turned out to be reliable for most (94.4 %) of the cases. Demographic characteristics of sample used are given in the Table 1.1.

**Table 1.1**  
*Demographic characteristics of sample and number of participants bifurcated into various categories*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Initial Sample</th>
<th>Gender</th>
<th>Class wise</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Levels</td>
<td>8th 9th</td>
<td></td>
</tr>
<tr>
<td>Number of Individuals</td>
<td>313</td>
<td>163</td>
<td>150 187 126</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SDs</td>
<td>0.97</td>
<td>1.09 1.03 0.80</td>
<td>1.028</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>Sample After Screening</th>
<th>Sex</th>
<th>Aggression</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>F</td>
<td>High on Aggression</td>
</tr>
<tr>
<td>Number of Individuals</td>
<td>250</td>
<td>130</td>
<td>120 125</td>
<td>65 60 60 60</td>
</tr>
<tr>
<td></td>
<td>SDs</td>
<td>0.90</td>
<td>0.97 0.99 0.98</td>
<td>0.84</td>
</tr>
<tr>
<td>Aggression scores</td>
<td>Means</td>
<td>91.25</td>
<td>106.17 103.4 104.84</td>
<td>76.34</td>
</tr>
<tr>
<td></td>
<td>SDs</td>
<td>17.32</td>
<td>8.82 7.93 8.49</td>
<td>8.69</td>
</tr>
</tbody>
</table>

M-Males, F-Females, T-Total
3.3.3 Tools used

3.3.3.1 Aggression Questionnaire (Buss & Perry, 1992)

It is a revised version of 'Buss & Durkee Hostility Inventory' (Buss & Durkee, 1957). It consists of 29 items, distributed unequally among Anger (7 items- item number 1, 9, 12, 18, 19, 23 & 28 e.g. “When frustrated, I let my irritation show”), Physical Aggression (9 items- item number 2, 5, 8, 11, 13, 16, 22, 25 & 29 e.g. “I have become so mad that I have broken things”), Hostility (8 items- item number 3, 7, 10, 15, 17, 20, 24 & 26 e.g. I am suspicious of overly friendly strangers”) & Verbal Aggression (5 items- item number 4, 6, 14, 21 & 27 e.g. I can’t help getting into arguments when people disagree with me”). It measures hostile aggression, because it contains items for aggressive behaviour and for angry/hostile feelings. For the total score, internal consistency (alpha) is .89 and 9-week test-retest reliability is .80 (Buss & Perry, 1992; Harris, 1997). Validity is supported by acceptable correlations with other self-report measures of aggression and with peer nominations of aggressive behaviour (Buss & Perry, 1992; Harris, 1997).

3.3.3.2 Hostile Attribution of Intent Explorer (HAIE)

Based on the ‘hypothetical social scenarios’ framed by Graham et al., (1992) and Hudley & Graham (1993), five hypothetical negative social scenarios to assess HAI were formulated for the present work. Each scenario presents a negative outcome for the respondent. There were 4 causes for each scenario given on a 5 point scale ranging from ‘Strongly Disagree’ (score of 1) to ‘Strongly Agree’ (score of 5). Subjects are to respond to each cause according to their perception of causality in each scenario. For every measure, two explanations show hostile intent and the other two show benign intent. If participants choose ‘strongly agree’ option for a statement with hostile intent, it depicts more HAI. On the other hand the
participants who select ‘strongly agree’ for a benign statement show less HAI. Thus reverse scoring is done for these benign statements. Higher score on this scale shows more HAI.

3.4 Procedure

First of all rapport was developed with the participants. With the standardized instructions, Aggression Questionnaire and Hostile Attribution of Intent Explorer were administrated and all the participants were thanked and told to meet again in the next session. After scoring of questionnaires, both males and females were categorized into two groups i.e. ‘high on aggression’ group and ‘low on aggression’ group with the procedure mentioned in ‘selection of subjects’ section. Corresponding scores of these two groups on Hostile Attribution of Intent Explorer were compared to see whether participants high on aggression and low on aggression differ significantly on it or not.

The participants who formed the ‘high on aggression group’ in this part of the research work were given Social Cognitive Intervention in Part II. Thus, the first part served screening purpose also.
3.4 Results

Statistical findings of the study are presented in Table 1.2 to Table 1.16. Graphical representations of the findings are depicted in Figure 1.1 to 1.5.

Table 1.2 depicts means & standard deviations of Hostile Attribution of Intent (HAI) and F-ratios for both levels of aggression and gender. It can be observed from the Table 1.2 that individuals who were high on aggression scored much higher on HAI (M=60.93, SD=11.24) as compared to those who were low on aggression (M=44.21, SD=7.83). The difference between these two groups on HAI was found to be statistically significant \( F (1,246) = 185.011, p<0.01 \). It clearly shows that individuals high on aggression were also high on HAI and those who were low on aggression were also low on the same. These findings support the first hypothesis that aggressive individuals would exhibit more HAI as compared to less aggressive individuals. On the other hand, males scored almost equal (M=52.64, SD=9.33) to females (M=52.49, SD=9.73) on HAI. Table 1.3 represents ANOVA summary for the effect of Aggression (high on aggression & low on aggression) and Gender on HAI. It is evident that neither main effect of gender nor its interaction with aggression came out to be significant for HAI. Same findings are presented in Table 1.4 which depicts mean scores of HAI bifurcated for gender for both levels of aggression. Figure 1.1 is the pictorial representation of the finding. Higher scores on HAI were observed among individuals in ‘high on aggression’ group regardless of their gender (Males=61.87, Females=59.98) as compared to their counterparts (Males=43.41, Females=45) in ‘low on aggression’ group. To sum, this study shows that aggressive individuals have a greater tendency to attribute intent of other as hostile in negative social encounter even when the situation is ambiguous and may thus engage in more aggressive
behaviours as compared to less aggressive individuals who have less tendency to attribute hostile intent in such a situation.

HAI scores were also analyzed separately for four sub-dimensions of Aggression questionnaire i.e. Anger, Physical aggression, hostility & verbal aggression. Table 1.5 presents means & standard deviations of HAI and F-ratios for both levels of anger and gender. As shown, individuals who were high on anger scored more on HAI (M=58.42, SD=11.59) than those who were low on anger (M=46.77, SD=11.00). This difference came out to be statistically significant {F (1,246) = 65.465, p<0.01}. Table 1.6 shows ANOVA summary for the effect of anger (high on Anger & low on Anger) and gender on HAI. In this table, it is clearly shown that neither main effect of gender nor its interaction with anger came out to be significant for HAI. Same finding is evident in Table 1.7 which shows mean scores of HAI bifurcated for gender for both levels of anger. Both males and females in ‘high on anger’ group showed higher level (Males=59.67, Females=57.05) of HAI as compared to males and females in ‘low on anger’ group (Males=46.07, Females=47.51). The finding is also presented in Figure 1.2.

HAI has also been found to be higher among individuals who were high on physical aggression (M=58.50, SD=12.12) as compared to those who were low on physical aggression (M=45.93, SD=10.10) and the difference between the two has been found to be statistically significant {F (1,246) = 78.51, p<0.01} as given in Table 1.8. It can be observed (Table 1.9) that there is no gender difference for HAI in relation to physical aggression. Males (M=52.64) and females (M=51.76) scored almost equal on HAI, and the difference between both has not been found to be statistically significant {F (1,246) =0.386, p>0.05}. No significant effect of gender, neither main effect nor its interaction with physical aggression was found for HAI.
Mean scores of HAI bifurcated for gender for both levels of physical aggression are presented in Table 1.10 and Figure 1.3. Both males and females in ‘high on physical aggression’ group have been found to be higher on HAI as compared to males and females in ‘low on physical aggression’ group (Table 1.10).

Table 1.11 shows means & standard deviations of HAI and F-ratios for both levels of hostility and gender. Individuals in ‘high on hostility’ group scored higher (M=57.42, SD=11.90) on HAI as compared to those who were ‘low on hostility’ group (M=47.18, SD=11.01). F-ratio between the two came out to be significant {F (1,246) = 49.02, p<0.01}. As given in Table 1.12, gender differences have not been found to be significant. However interaction effect of hostility and gender for HAI is found to be very close to the significance level {F (1,246) = 3.218, p=0.07}. Table 1.13 and Figure 1.4 depict that males scored more (M=59.09) on HAI than females (M=55.60) in ‘high on hostility’ group, but trend was opposite as males scored less (M=46.37) than females (M=48.07) in ‘low on hostility’ group. There is some interaction effect of hostility & gender for HAI but it did not reach to the significance level.

Scores of HAI for individuals who were high on fourth dimension of Aggression Questionnaire i.e. verbal aggression, have been found to be higher (M=56.77, SD=13.39) than those who were low on this dimension (M=47.66, SD=9.89) as given in Table 1.14. Significant difference has been found between these two groups as F-ratio exceeds the critical ratio for significance at 0.01 level {F (1,246) = 36.88, p<0.01}. Table 1.14 shows that males scored more on HAI than females but the difference has not been found to be significant as evident in Table 1.15 also. Interaction effect also did not come out to be significant (Table 1.15). Same finding is presented in Table 1.16 and Figure 1.5 which depict mean scores of HAI bifurcated.
for gender for both levels of verbal aggression. In ‘high on verbal aggression’ group, both males and females scored higher (Males=57.84, females=55.60) on HAI as compared to their counterparts in ‘low on verbal aggression’ group (Males=47.66, females=47.65).

In sum, it can be stated that significant main effect were found for aggression and its all four sub-dimensions. However, no significant main effects for gender were found for HAI, showing males and females scored almost equal on HAI.
Table 1.2

*Means & Standard Deviations of hostile attribution of intent and F-ratios for Aggression and Gender*

<table>
<thead>
<tr>
<th>Groups</th>
<th>Means</th>
<th>SD*</th>
<th>F-ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>High on Aggression</td>
<td>60.93</td>
<td>11.24</td>
<td>185.011**</td>
</tr>
<tr>
<td>Low on Aggression</td>
<td>44.21</td>
<td>7.83</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>52.64</td>
<td>9.33</td>
<td>0.016</td>
</tr>
<tr>
<td>Females</td>
<td>52.49</td>
<td>9.73</td>
<td></td>
</tr>
</tbody>
</table>

a- Standard Deviation

* p < .01

Table 1.3

*ANOVA summary for the effect of Aggression and Gender on hostile attribution of intent*

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggression (A)</td>
<td>17449.5</td>
<td>1</td>
<td>17449.5</td>
<td>185.011*</td>
</tr>
<tr>
<td>Gender (B)</td>
<td>1.5</td>
<td>1</td>
<td>1.5</td>
<td>0.016</td>
</tr>
<tr>
<td>AB</td>
<td>188.7</td>
<td>1</td>
<td>188.7</td>
<td>2.001</td>
</tr>
<tr>
<td>Within (Error)</td>
<td>23201.8</td>
<td>246</td>
<td>94.3</td>
<td></td>
</tr>
</tbody>
</table>

df- Degree of Freedom

*p < .01

Table 1.4

*Mean scores of hostile attribution of intent bifurcated for gender and Aggression*

<table>
<thead>
<tr>
<th>Gender</th>
<th>High on Aggression</th>
<th>Low on Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>61.88</td>
<td>43.42</td>
</tr>
<tr>
<td>Females</td>
<td>59.98</td>
<td>45</td>
</tr>
</tbody>
</table>
**Figure 1.1**
Mean scores of hostile attribution of intent of individuals high on aggression and low on aggression with bifurcation for gender in each group

**Table 1.5**
Means & Standard Deviations of hostile attribution of intent and F-ratios for Anger and Gender

<table>
<thead>
<tr>
<th>Groups</th>
<th>Means</th>
<th>SD(^a)</th>
<th>F-ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>High on Anger</td>
<td>58.42</td>
<td>11.59</td>
<td>65.465*</td>
</tr>
<tr>
<td>Low on Anger</td>
<td>46.77</td>
<td>11.00</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>52.88</td>
<td>13.27</td>
<td>0.172</td>
</tr>
<tr>
<td>Females</td>
<td>52.28</td>
<td>12.09</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Standard Deviation  
\(^*\)p<.01

**Table 1.6**
ANOVA summary for the effect of Anger and Gender on hostile attribution of intent

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger (A)</td>
<td>8348.4</td>
<td>1</td>
<td>8348.4</td>
<td>65.465*</td>
</tr>
<tr>
<td>Gender (B)</td>
<td>22.0</td>
<td>1</td>
<td>22.0</td>
<td>0.172</td>
</tr>
<tr>
<td>AB</td>
<td>258.0</td>
<td>1</td>
<td>258.0</td>
<td>2.023</td>
</tr>
<tr>
<td>Error</td>
<td>31370.7</td>
<td>246</td>
<td>127.5</td>
<td></td>
</tr>
</tbody>
</table>

\(^*\)p<.01
Table 1.7
Mean scores of hostile attribution of intent bifurcated for gender and Anger

<table>
<thead>
<tr>
<th>Gender</th>
<th>High on Anger</th>
<th>Low on Anger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>59.68</td>
<td>46.08</td>
</tr>
<tr>
<td>Females</td>
<td>57.05</td>
<td>47.52</td>
</tr>
</tbody>
</table>

Figure 1.2
Mean scores of hostile attribution of intent of individuals high on Anger and low on Anger with bifurcation for gender in each group

Table 1.8
Means & Standard Deviations of hostile attribution of intent and F-ratios for Physical Aggression and Gender

<table>
<thead>
<tr>
<th>Groups</th>
<th>Means</th>
<th>SD(^a)</th>
<th>F-ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>High on Physical Aggression</td>
<td>58.50</td>
<td>12.12</td>
<td>78.509*</td>
</tr>
<tr>
<td>Low on Physical Aggression</td>
<td>45.93</td>
<td>10.10</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>52.64</td>
<td>13.47</td>
<td>0.386</td>
</tr>
<tr>
<td>Females</td>
<td>51.76</td>
<td>12.06</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Standard Deviation
\(^*\)p<.01
Table 1.9
ANOVA summary for the effect of Physical Aggression and Gender on hostile attribution of intent

<table>
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<th>Source of variance</th>
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<th>F</th>
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</thead>
<tbody>
<tr>
<td>Physical Aggression (A)</td>
<td>9823.1</td>
<td>1</td>
<td>9823.1</td>
<td>78.509*</td>
</tr>
<tr>
<td>Gender (B)</td>
<td>48.3</td>
<td>1</td>
<td>48.3</td>
<td>0.386</td>
</tr>
<tr>
<td>AB</td>
<td>33.3</td>
<td>1</td>
<td>33.3</td>
<td>0.266</td>
</tr>
<tr>
<td>Error</td>
<td>30780.0</td>
<td>246</td>
<td>125.1</td>
<td></td>
</tr>
</tbody>
</table>

df - Degree of Freedom
*p < .01

Table 1.10
Mean scores of hostile attribution of intent bifurcated for gender and Physical Aggression

<table>
<thead>
<tr>
<th>Physical Aggression</th>
<th>High on Physical Aggression</th>
<th>Low on Physical Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Males</td>
<td>59.28</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>57.67</td>
</tr>
</tbody>
</table>

Figure 1.3
Mean scores of hostile attribution of intent of individuals high on Physical Aggression and low on Physical Aggression with bifurcation for gender in each group
Table 1.11
*Means & Standard Deviations of hostile attribution of intent and F-ratios for Hostility and Gender

<table>
<thead>
<tr>
<th>Groups</th>
<th>Means</th>
<th>SD*</th>
<th>F-ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>High on Hostility</td>
<td>57.42</td>
<td>11.90</td>
<td>49.020*</td>
</tr>
<tr>
<td>Low on Hostility</td>
<td>47.18</td>
<td>11.01</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>52.73</td>
<td>13.17</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>51.83</td>
<td>11.85</td>
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</table>

a- Standard Deviation
*p<.01

Table 1.12
ANOVA summary for the effect of Hostility and Gender on hostile attribution of intent

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<th>F</th>
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<td>6401.0</td>
<td>49.020*</td>
</tr>
<tr>
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<td>50.3</td>
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<td>AB</td>
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<td>246</td>
<td>130.6</td>
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df- Degree of Freedom
*p<.01

Table 1.13
Mean scores of hostile attribution of intent bifurcated for gender and Hostility

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<thead>
<tr>
<th>Gender</th>
<th>Hostility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High on Hostility</td>
</tr>
<tr>
<td>Males</td>
<td>59.09</td>
</tr>
<tr>
<td>Females</td>
<td>55.60</td>
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</tbody>
</table>
**Figure 1.4**
Mean scores of hostile attribution of intent of individuals high on Hostility and low on Hostility with bifurcation for gender in each group

**Table 1.14**
Means & Standard Deviations of hostile attribution of intent and F-ratios for Verbal Aggression and Gender

<table>
<thead>
<tr>
<th>Groups</th>
<th>Means</th>
<th>SD(^a)</th>
<th>F-ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>High on Verbal Aggression</td>
<td>56.77</td>
<td>13.39</td>
<td>36.881*</td>
</tr>
<tr>
<td>Low on Verbal Aggression</td>
<td>47.66</td>
<td>9.89</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>52.75</td>
<td>13.34</td>
<td>0.572</td>
</tr>
<tr>
<td>Females</td>
<td>51.63</td>
<td>11.78</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Standard Deviation

\(^*\)p<.01

**Table 1.15**
ANOVA summary for the effect of Verbal Aggression and Gender on hostile attribution of intent

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Aggression</td>
<td>5130.3</td>
<td>1</td>
<td>5130.3</td>
<td>36.881*</td>
</tr>
<tr>
<td>Gender(B)</td>
<td>79.5</td>
<td>1</td>
<td>79.5</td>
<td>0.572</td>
</tr>
<tr>
<td>AB</td>
<td>77.9</td>
<td>1</td>
<td>77.9</td>
<td>0.560</td>
</tr>
<tr>
<td>Error</td>
<td>34219.1</td>
<td>246</td>
<td>139.1</td>
<td></td>
</tr>
</tbody>
</table>

\(\text{df- Degree of Freedom}\)

\(^*\)p<.01
Table 1.16  
Mean scores of hostile attribution of intent bifurcated for gender and Verbal Aggression

<table>
<thead>
<tr>
<th>Gender</th>
<th>Males</th>
<th>57.85</th>
<th>47.66</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Females</td>
<td>55.60</td>
<td>47.65</td>
</tr>
</tbody>
</table>

![Figure 1.5]

Mean scores of hostile attribution of intent individuals high on Verbal Aggression and low on Verbal Aggression with bifurcation for gender in each group

93
3.5 Discussion

Aggression is one of the best known predictors of future social, psychological, behavioural, and academic problems. Researchers postulate various causal risk factors for aggression. In present research work, one such factor i.e. one’s social information processing style, specifically hostile attribution of intent was investigated in relation to aggression. Interpretation of the causes of others’ behaviour is a crucial mediator of our reactions in social situations. Attribution precedes emotions (Weiner’s 1985, 1986). Attribution which people make in negative social encounters may serve to justify and perpetuate their aggression (Bell-Dolan & Anderson, 1999). The kind of attribution a person makes has an important bearing on his well-being, motivation and performance. Attribution of hostile intent in others’ behaviour may lead individuals to behave aggressively i.e. individuals who are biased to interpret others’ intent as hostile, tend to be aggressive. The present study was an effort to explore whether this proposition is true for the present sample. The primary purpose of the study was to assess the differences between aggressive and less aggressive individuals on hostile attribution of intent.

As given in the Table 1.2, individuals high on aggression scored more on hostile attribution of intent as compared to individuals low on aggression. When placed in hypothetical negative social situation, aggressive individuals were not able to interpret the social situation accurately and perceive the negative consequences as the outcome of hostile intention of other person present in the scene. This finding supports the first hypothesis that aggressive individuals would exhibit more hostile attribution of intent as compared to less aggressive individuals. Same trend was also observed when scores on hostile attribution of intent were compared for high and low levels of sub-dimensions of aggression i.e. anger, physical aggression, hostility and verbal aggression. Individuals high on these dimensions were found to
have more tendencies to attribute others’ intent as hostile, even when situation was ambiguous with no clear cues (Table 1.5, 1.8, 1.11, 1.14). In ambiguous situations, aggressive individuals reacted as the peer's intentions were hostile; while the less aggressive individuals responded as those intentions were benign. This tendency led aggressive adolescents further to behave aggressively even in ambiguous situation. One of the reasons why aggressive individuals act aggressively is that they attribute hostile intentions to others more often than do other children.

This finding of the present study is supported by one classic study by Dodge (1980), in which the researcher used scenarios that depicted only ambiguous intent and asked aggressive and non-aggressive boys to judge the intent and subsequent behaviours of a named peer, and for the subjects’ response to the hypothesized peer. The researcher found that aggressive boys attributed hostility 50% more often in ambiguous situations than did non-aggressive boys.

The findings of the study can be explained within the framework of Social Information Processing (SIP) model (Dodge, 1986; Crick & Dodge, 1994). SIP is an important construct in the explanation of human aggression (Gifford-Smith & Rabiner, 2004; Huesmann, 1997). In the present study, individuals high on aggression showed more hostile attribution of intent as compared to less aggressive ones because aggressive individuals’ social information processing tends to be faulty at encoding and interpretation step (Crick & Dodge, 1994). Since such individuals encode peers’ behaviour as malicious, they experience anger and further decide that verbally or physically insulting the peers is the most appropriate behavioural recourse. On contrary, less aggressive individuals encode non-hostile emotion cues, interpret the peers’ actions as benign, and decide that ignoring the peers’ behaviour would be the most appropriate action. The finding is also in line with Crick and Dodge’s (1994) finding which found that in ambiguous situations; highly aggressive individuals typically made their social decisions
quickly, ignored available social cues, and endorsed retaliatory aggression. Thus, excessively aggressive individuals may justify their endorsement and subsequent use of unwarranted aggressive retaliation by means of hasty made inappropriate judgment about the intent of other. Any individual who believes that a peer has been intentionally harmful might be expected to retaliate with aggression. Highly aggressive individuals assume, often inappropriately, that peer's negative behaviour toward them is most likely guided by hostile intentions and thus deserving of aggressive retaliation. This further proves that aggression and attribution have been found to be related to each other (Nasby, Hayden, & DePaulo, 1980).

The findings are also in line with researches reporting that aggressive individuals mostly encode less-relevant information as compared to their less aggressive peers, attribute more hostile intentions and feelings of glee, and have fewer feelings of guilt or shame, particularly when they are in a negative emotional state (Orobio de Castro et al., 2003). Besides, aggressive individuals do not adapt their social information processing pattern to different situations as much as their peers (Waldman, 1996), regulate their anger in a less adaptive manner than less aggressive individuals (Orobio de Castro et al., 2005) and they typically generate more aggressive responses and evaluate aggressive responses more positively than less aggressive individuals (e.g. Matthys et al., 1999).

Similar findings were observed in the study conducted by Dodge et al., (2003) and Lochman & Dodge (1998). Aggressive individuals tend to have distorted interpretations of the relevant social interactions. Prone to misinterpretation of social events and other people’s intentions, these individuals may turn to aggression as an appropriate response or solution to interpersonal problems.
The findings can also be explained by the assertions made by Anderson & Bushman (2002) and Berkowitz (1993) that aggressive individuals have more elaborated and readily accessible aggression related cognitions. These aggressive cognitions are acquired by children through early experiences and socialization (Dodge, 2002). The development of aggression-related knowledge structures can shape an individual’s personality and, thus, influence the likelihood that the individual will engage in aggressive behaviour (Anderson and Bushman, 2002). Individual’s personality may further bias the ways he or she interprets information, which, in turn, may guide aggressive behaviour. Negative affect resulting from the cognitive evaluation that an external stimulus is provocative, often results in anger and subsequent aggressive behaviour as cognition and negative affect, or anger, are inextricably linked (Huesmann, 1998).

Thus, because of the tendency to think that others behave towards them with hostile intentions, aggressive individuals are more likely than there less aggressive peers to over interpret hostility, attributing even non-hostile provocation from a playmate to hostile intent (Dodge, 1986; Lochman & Dodge, 1994).

Another significant finding of the present work is that there is no gender difference on hostile attribution of intent, disproving the proposed hypothesis that males would be higher on hostile attribution of intent as compared to males. In the literature so far, not many studies have investigated gender difference in hostile attribution of intent. Orobio de Castro et al. (2002), in their meta-analysis related to hostile attribution of intent and aggression found no significant gender difference for hostile attribution of intent. However, they revealed in their analysis that only one study was related to females, rest investigated the phenomenon among males only. Thus there is need to conduct some studies assessing effect of gender on hostile attribution of
intent. As far as the present study is concerned, it is not able to document any significant
difference between males and females on hostile attribution of intent.

One of the explanations that can be offered for the present finding is that males and
females do not differ on overall aggression; they tend to be equal on hostile attribution of
intent. This finding can be explained with the help of one well documented theory (Bjorkqvist,
1994) of gender differences in aggression that states that men exhibit direct aggression while
women exhibit indirect aggression. A number of sources suggest that men are more likely than
women to be physically aggressive (Chilton and Jarvis, 1999). However, women may be
equally aggressive or even more aggressive in non-physical aggression (Bjorkqvist, 1994).
Gender difference exists but only for the dimensions of aggression and not for the overall all
aggression. When scores on all sub-dimensions summed, the difference between sub-
dimensions are averaged resulting in equal scores on aggression for both genders. Thus, males
and females do not differ on aggression rather they differ on dimensions of aggression, so they
may also be equal on hostile attribution of intent.

The finding gets support from a related study by Yeung and Leadbeater (2007) that
found no significant gender differences in hostile attributional bias; however it was conducted
only for relational aggression. Researchers argued for the findings that in adolescence
relationally aggressive behaviours become prevalent among both boys and girls (Craig, 1998;
Prinstein et al., 2001). Therefore, relational provocations that damage peer relationships may be
more common and hurtful for both adolescent boys and girls. In one similar study, Zakriski &
Coie (1996) assessed gender differences in perceptual bias but neither main effect of gender nor
interaction with other studied variables were supported by the investigation.
It can be concluded that aggressive individuals have been found to be higher on hostile attribution of intent as compared to less aggressive individuals. The present study supports the assertion made by Crick and Dodge (1994) and other related researches that aggressive individuals tend to have high hostile attribution of intent than less aggressive individuals and they may further behave more aggressively after attributing hostile intent. This study implicates that if hostile attribution of intent can be modified, significant decrease in the level of aggression can be brought. It is suggested by present findings that some intervention must be developed to alter aggressive individuals’ social information processing pattern which can further result in reduced aggression.

In the light of other related researches and present findings, a social cognitive intervention based upon a social information processing model (Crick and Dodge, 1994), and the General Aggression Model (Anderson & Bushman, 2002) was devised and applied on aggressive adolescents to reduce hostile attribution of intent.