

# Attachment and the Formation of Social Orientations in Non-WEIRD Mexican Indigenous Societies

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## ABSTRACT

*This research is based on extensive findings regarding the impact of separation between mothers and infants and its lasting implications. It incorporates a wide array of animal and human studies, pinpointing the link between early bonding and the values associated with social orientation. This pioneering research on attachment of non-White, Educated, Industrialized, Rich, Democratic (WEIRD) Society involved 91 participants from eastern Mexico, amidst rapid sociocultural and economic shifts. Four primary hypotheses were examined, centering on prosocial behavior, levels of attachment, and the interplay between attachment and gender in response to evolving societal roles. The findings upheld the hypotheses and were analyzed in the context of Greenfield's theory of sociocultural change and human development.*

## Introduction

The central contemporary problem in social relationships is how to live in situations of interdependence when we are in the middle of World War III. This study stems from several major theoretical contributions centered on how early attachment has strong effects on animals as well as on human beings. The story started in the 1930s when Konrad Lorenz [1,2] became concerned about the mother-following behaviors of ducks and other birds exhibited by their chicks. He and his collaborators observed that this acquisition was considered a critical period because it only occurred within a range between 8 to 15 hours after birth and was observed not only with the mother but with any moving object around the chicks. Other studies, such as Rosenzweig's [3] research on the effects of rat interaction on neural development and Harlow's [4] study on the negative effects of monkeys' separation from their mothers, have enhanced our understanding of the various effects of social interaction, especially in animals. Unfortunately, a strong resistance to validate their findings as applicable to human behavior lasted until 1975 when Lorenz was awarded the Nobel Prize in Medicine. Yet Lorenz's findings benefitted Ainsworth [5] and Bowlby's [6] discovery of the importance of the emotional ties involved in the early interaction between mother and infant and its subsequent consequences throughout the lifetime [7] in

both normal and pathological behavior [8], as well as in social and even neuroscience research [9,10]. In sum at the end of the 20th-century attachment became a central issue in theory, research, and even clinical applications [11]. In 1997, Van Lange [12] using McClintock's [13] classification of interaction responses (individualism, competition, and cooperation) provided evidence of a relationship between attachment and social orientation in European participants. Adding to these findings, IJzerman & Denissen [14] replicated Van Lange's original study using new methods and WEIRD samples, and reported slight discrepancies.

While all these research traditions attest to the effects of early attachment on animals as in human beings, a new call emerged when Henrich et al. [15] after reviewing major publications on behavioral and social sciences, claimed that:

...samples drawn entirely from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies. Researchers - often implicitly - assume that either there is little variation across human populations, or that these "standard subjects" are as representative of the species as any other population. Are these assumptions justified? (p. 1).

This research addresses Henrich's questions by selecting a sample

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from non-WEIRD societies, a young adult population under a cultural change in non-industrial areas. This population located in Eastern Mexico identified as Nahuatl and Totonacos has been studied by anthropologists for nearly three centuries and by psychologists for over 50 years. Anthropologists based on fieldwork and participant observation have demonstrated that non-WEIRD Totonaco and Nahuatl despite 500 years of conquest and oppression throughout generations preserve their cultures [16,17].

Psychologists [18,19] through experimental research have demonstrated the effects of rapid sociocultural change on social development. The proposition that rural or urban cultures promote children's cooperative and competitive behaviors was originally proposed by Madsen testing Mexican children with interactive tasks. Fifty years later García using the same experimental procedures, in the same geographical areas, and same-age participants found a decline in cooperation compared with Madsen's findings. Furthermore, these new findings supported Greenfield's theory [20] that a trend from cooperation to competition was due to social change. Van Doesum, García, et al. [21] found that in a recent study comparing social mindfulness and prosociality in 31 nations, Mexico ranked second highest among young adults.

## Method

Thus, considering all anthropological and psychological contributions and the specific population characteristics, we have developed several hypotheses on these non-WEIRD societies who inhabit quasi or semi-urban nonindustrial areas. While they are not industrial, they are distinct and have limited options for caregivers. The hypotheses were focused on two main variables. The first variable in this study is social value orientation, defined by Van Lange [12] following McClintock's contribution [13] as prosocial, competitive, or individualistic. The second variable is attachment style, which concerns the trust dynamics between children and their caregivers during early childhood. These variables were derived from the central theory proposed by Van Lange [12] and IJzerman [14] after investigating them with European (WEIRD) participants. These authors suggested that attachment style predicts interactions in later stages of life. Departing from their contention, we anticipate variations due to socioeconomic change and the increasing participation of women in the workforce.

Restating, this research aims to explore the relationships between attachment and social motivation in light of the rapid social changes in Mexico over the past 50 years. Four hypotheses are proposed. The first hypothesis is based on consistent findings about the cooperative nature of this population. We expect to see more prosocial responses than individualistic or competitive responses. The second hypothesis suggests that higher levels of avoidant or anxious attachment will be generally observed, consistent with the changing parental dynamics among acculturated native populations, as García shows. The third hypothesis proposes a high correlation between participants with an individualistic and competitive orientation and higher levels of anxious or avoidant attachment levels of secure attachment. The fourth hypothesis suggests that there will be an interaction effect based on the

participants' gender. Due to societal changes that have altered traditional gender roles, especially with more women entering the workforce, men are more likely to show high levels of secure attachment. In contrast, women are expected to display higher levels of anxious or avoidant attachment scores across all social orientations.

## Participants

Overall, this sample of recently acculturated participants experienced rapid changes in population size, and advances in communications technology, alongside limited transportation and high unemployment. Out of the 91 participants who completed the questionnaires, their ages ranged between 18 and 44 ( $M=21.59$ ,  $SD=4.64$ ). Among them, 70.32% were females, while the remaining 29.67% were males (Table 1). All participants were students born and raised in non-industrial areas. Participants' parents had lower income and no college education. All participants completed their informed consent before answering questionnaires.

## Procedures

The tasks consisted of the same instruments used with WEIRD societies, the questionnaires included in the study were of two types. The first type was based on a series of games described by Van Lange in 1997 [12]. These games were used to evaluate social value orientation. In these questionnaires, participants were asked to make nine choices between different combinations for distributing points between themselves and a hypothetical partner. Each choice corresponds to a social value orientation. For example, choosing an option where one would receive the highest points compared to the partner would indicate a competitive orientation, meanwhile focusing on benefiting oneself over the other is individualistic. Conversely, choosing an option with the smallest difference between one's and the partner's scores would indicate a prosocial orientation, prioritizing equality and fairness. We then classified participants as competitive, individualistic, or prosocial based on their most frequently chosen social orientation (six or more choices).

The second questionnaire was a modified version of the IJzerman et al. [14] Adult Attachment Scale consisting of 13 items that measure secure, avoidant, and anxious attachments. The first five items are associated with secure attachment, the next four with avoidant attachment, and the last four with anxious attachment. After participants completed both questionnaires, we tabulated and analyzed the data using the PAWS statistical program (v. 22).

## Results

The initial hypothesis suggested that higher levels of prosocial behavior would be observed compared to individualistic and competitive behavior (refer to Table 1). The results indicated that out of 91 participants, 78 exhibited prosocial behavior (85.71%), 9 displayed individualistic behavior (9.89%), and 4 showed competitive behavior (4.39%). It's important to consider that these participants are young adults who are engaging in a task that, for their age group, does not necessitate a significant level of commitment.

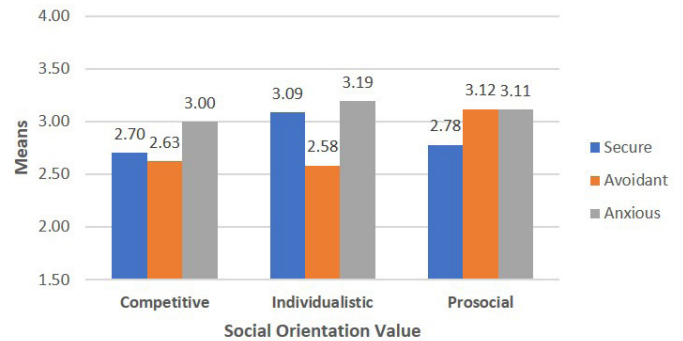
**Table 1:** Comparison of Attachment Type and social Orientation Values by sex.

	Men	Women	Total
Social Orientation Value	Fr (%)	Fr (%)	Fr (%)
Competitive	2 (7.4)	2 (3.1)	4 (4.39%)
Individualistic	4 (14.8)	5 (7.8)	9 (9.89%)
Prosocial	21 (77.78)	57 (89.06)	78 (85.71%)
<b>Total</b>	<b>27 (100)</b>	<b>64 (100)</b>	<b>91 (100)</b>
Attachment Style	M (DS)	M (DS)	M (DS)
Secure	2.95 (0.45)	2.75 (0.73)	2.81 (0.67)
Avoidant	2.98 (0.58)	3.07 (0.61)	3.04 (0.60)
Anxious	2.94 (0.67)	3.19 (0.60)	3.12 (0.69)

In terms of attachment style, three different scores were obtained based on the types of attachment (secure, avoidant, and anxious). The highest average score was anxious (M= 3.12, SD= 0.69), followed by avoidant (M= 3.04, SD= 0.60) and secure (M= 2.81, SD= 0.67). The results also support the second hypothesis: Compared to secure attachment, there are higher levels of anxious and avoidant attachment.

The results of the study were unexpected about the third hypothesis. It was found that individuals with a prosocial orientation did not show higher levels of secure attachment. However, those with a competitive and individualistic social orientation did display higher levels of anxious attachment (refer to Figure 1).

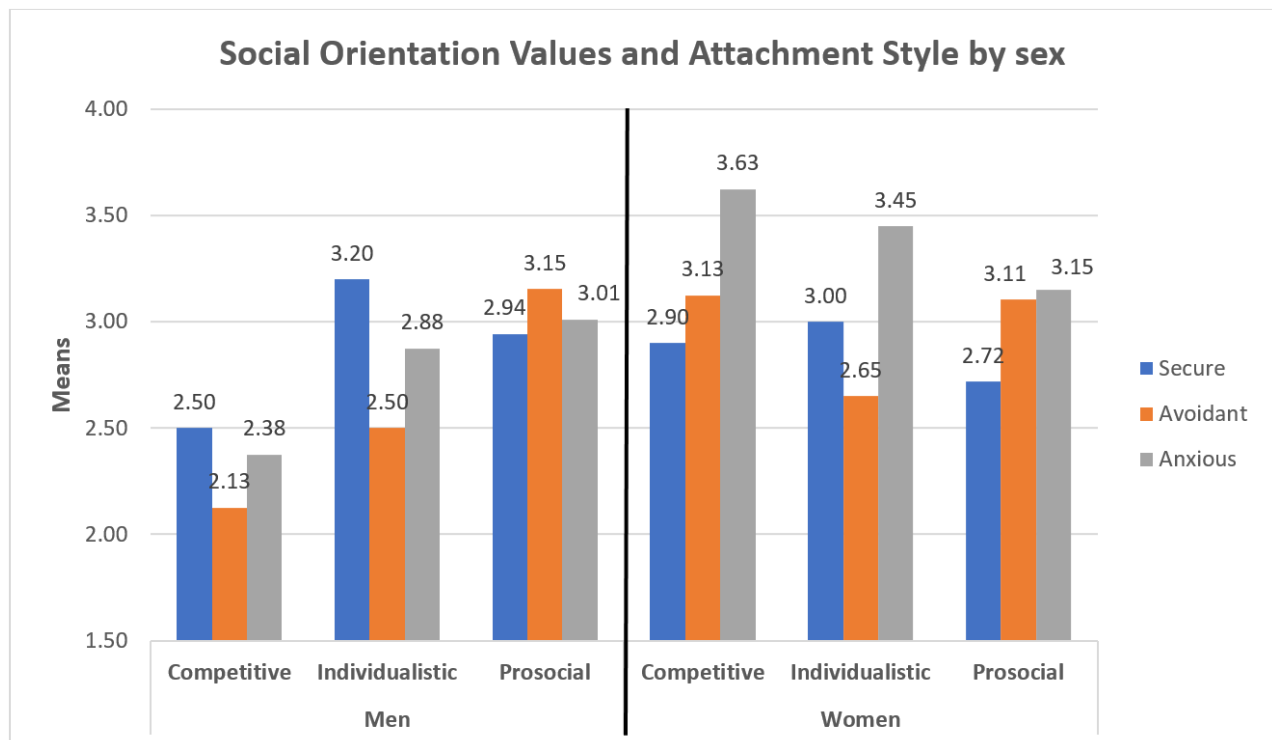
**Social Orientation Values and Attachment Style**



**Figure 1:** Social Orientation Values and Attachment Style.

Furthermore, the results supported the hypothesis that gender would have an impact. The findings revealed that men exhibited higher levels of secure attachment, while women showed higher levels of anxious attachment across all social orientations (refer to Figure 2).

Compared to secure attachment, there are higher levels of anxious and avoidant attachment. In Table 2, it was found that there is an effect of social orientation on the type of avoidant attachment,  $H(2)= 9.55, p<.05$ . Individuals with a prosocial orientation showed higher levels of avoidant attachment (Mdn= 3.00) compared to individuals with an individualistic orientation (Mdn= 2.50,  $p<.05$ ). The 95% confidence interval was [0.96, 0.10].



**Figure 2:** Social Orientation Values and Attachment Style by sex.

**Table 2:** Comparison of Attachment Type between social orientations and sex.

	C-M	I-M	P-M	C-W	I-W	P-W
	Mdn (Range)	Mdn (Range)	Mdn (Range)	Mdn (Range)	Mdn (Range)	Mdn (Range)
Secure	2.50 (0.20)	3.20 (0.80)	3.00 (2.0)	2.90 (0.20)	3.00 (2.00)	2.80 (3.40)
Avoidant	2.13 (0.25)	2.38 (0.75)	3.00 (2.5)	3.13 (0.25)	2.75 (1.25)	3.00 (3.75)
Anxious	2.38 (2.25)	2.88 (1.25)	2.75 (3.0)	3.63 (0.25)	3.50 (1.50)	3.25 (4.00)

**Note:** C-M= Competitive Men; I-M= Individualistic Men; P-M= Prosocial Men; C-W= Competitive Women; I-W= Individualistic Women; P-W= Prosocial Women.

The following correlations were using Rho's Spearman analysis. There were avoidant attachment style with prosocial orientation correlation ( $r_s = 0.276$ ,  $p < .01$ ) and a negative correlation with individualistic orientation ( $r_s = -0.229$ ,  $p < .01$ ). Among men, there was a weak positive correlation between prosocial orientation and avoidant attachment style ( $r_s = 0.359$ ,  $p < .05$ ) and a negative correlation between competitive orientation and avoidant attachment style ( $r_s = -0.434$ ,  $p < .05$ ). However, these correlations were not observed in the female group.

In summary, non-WEIRD participants exhibited the following results, compared to their counterparts:

1. Prosocial behavior was demonstrated even without high levels of secure attachment.
2. High levels of anxiety and avoidance were observed in various social situations.
3. High levels of anxiety were linked to prosocial behaviors.
4. Women exhibited higher levels of anxiety regardless of social orientation, which Van Lange found to be unaffected by gender differences in WEIRD societies.

The study builds on Van Lange's work, showing similar yet varied results across different cultures. Recognizing the importance of Henrich's ideas and the need to go beyond WEIRD (Western, Educated, Industrialized, Rich, and Democratic) backgrounds, acknowledging the nature of different structural components of attachment relationships and strengthening with broader theoretical contributions. First, most of the previous studies, by focusing mainly unilaterally on the infant, underscore the importance of studying the dyad in interdependence. Second, the acknowledgment that each member of the dyad brings their own history, personality, and cultural background into the situation. Acknowledgement of this fact may contribute to explaining the variability in the last four-pointed observations and across the WEIRD societies and their counterparts. Thirdly, equally important is the recognition that the social situation itself changes over time. Thus, for future studies, two major theories offer a suitable framework for analyzing attachment dyadic interaction of non and WEIRD societies. One is the theory of interdependence, as proposed by Kelley and Thibaut [22], and the other, is Greenfield's [20] theory which links social change with human development. The theory of interdependence focuses on how in dyadic interactions, the actions and attributions of individuals influence each other. Furthermore, it suggests that psychological and cultural mechanisms play a role in transforming the objective into an effective situation faced by the individuals. Furthermore, the time dimension is indispensable in an era of fast socioeconomic and cultural transformations. Greenfield's

theory "aims to show how changing sociodemographic ecologies alter cultural values and learning environments and thereby shift developmental pathways". Future research needs to consider this perspective, especially in light of the current findings on the impact of attachment and neurological development over time, while also considering diverse cultural backgrounds beyond WEIRD societies. Both types of societies are changing, although the WEIRDs are falling in a weird direction; this brings us to a last consideration.

A final point to consider, within the current context of World War III raised by the WEIRD societies, is to recognize the significant role of attachment in the development of all species, including animals and humans, currently, upheld by the non-WEIRDS, even though they are declining in secure attachment. The impact of early separation from the mother and any attempts to replace it cannot be overlooked in human social interactions and relationships. This study delves into the importance of early attachments and their effects on declining relationships, particularly in populations transitioning from non-Western to WEIRD (Western, educated, industrialized, rich, and democratic) societies.

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