

## Examining Family Cohesion and the Quality of Parent-Child Relationships Among Students with Internet Abusive Use and Normal Students

Marjan Kheirandish<sup>1</sup> , Nadereh Sohrabi<sup>2</sup> , Hossein Baghooli<sup>3</sup> , Seyed Ebrahim Hosseini<sup>4</sup> 

1. PhD Student, Department of Educational Psychology, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran

2. Assistant professor, Department of Psychology, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran,

[dr.sohrabi.marvdasht@gmail.com](mailto:dr.sohrabi.marvdasht@gmail.com)

3. Assistant professor, Department of Psychology, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran

4. Assistant professor, Department of Psychology, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran

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### ABSTRACT

**Objective:** Adolescents are perpetually exposed to the perilous utilization of the Internet, which consequently engenders adverse ramifications in their adult life. The present investigation was undertaken with the objective of examining family cohesion and the quality of parent-child relationships among students exhibiting detrimental Internet usage in contrast to their normal students.

**Methods:** The statistical population for this inquiry encompassed the students enrolled in the second year of secondary education during the academic year 2018-2019 within the educational institutions of Shiraz. The current study represents a correlational research design wherein, through the application of clean analysis methodology and predicated on the relationships among the variables, two distinct groups of students—those adversely affected by Internet usage and those deemed typical—were delineated, and subsequently, new classifications were established. In this descriptive research (causal-comparative), a sample of 120 participants (60 students exhibiting abusive Internet usage and 60 typical students) was procured through purposive sampling techniques. The participants were solicited to complete the Internet Abusive Use Questionnaire (IAUQ), the Parent-Child Relation Inventory (PCRS), and the Family Cohesion Questionnaire (FCQ). The data amassed were subjected to analysis via SPSS16.

**Results:** The findings indicated that variables such as paternal anger, maternal role confusion, paternal communication, maternal communication, family cohesion, and the affirmative influence of mothers significantly forecast the harmful Internet usage among students. The canonical correlation of these variables in the group differentiation during clean analysis utilizing the simultaneous method was determined to be 0.959.

**Conclusions:** The outcomes of this study substantiated the significance of family cohesion and the quality of parent-child relationships as pivotal predictors of the likelihood of harmful Internet utilization.

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## Introduction

The Internet represents one of the most significant recent accomplishments of humanity, recognized as a fundamental component of individuals' everyday experiences in the modern era, with its utilization continually proliferating ([Malak et al., 2017](#)). Concurrently with the extensive availability of the Internet to the populace, there exists a troubling phenomenon associated with its usage, which constitutes a distinct concern of the information age, resulting in personal detriment (such as academic underachievement and employment challenges) as well as, to a certain extent, societal detriment (including the neglect of familial relationships and the disintegration of social connections), commonly referred to as virtual addiction, and more prevalently recognized as Internet addiction ([Christakis, 2010](#)). The diverse applications of the Internet and its inherent allure have precipitated the emergence of a phenomenon termed Internet addiction in recent years, which exemplifies the detrimental usage of the Internet ([Donga & Zindiye, 2018](#)).

In scholarly literature, terminologies such as obsessive Internet use, Internet-related issues, problematic Internet use, harmful Internet use, and Internet-related addictive behavior have been employed ([Purrezaian & Rostami, 2017](#)). Nevertheless, over the past decade, the majority of scholars have predominantly utilized the terms Internet addiction or Internet addiction disorder ([Brand et al., 2014](#)). Furthermore, the concepts of Internet disorder and pathological Internet use have been referenced in the writings of [Young \(2009\)](#), a universally accepted comprehensive definition of harmful Internet use remains elusive among researchers ([Amiri & Taghinejad, 2022](#)). In their examination, [Mottaghi and Safaie \(2017\)](#) characterized harmful Internet use as a pattern of behavior in which an individual engages with the Internet excessively, exhibits an inability to regulate this conduct, interferes with other pursuits and inclinations, and inflicts emotional distress and harm.

The family unit and the dynamics between parents and children have been areas of considerable interest for educational scholars over an extended period. In this context, theorists within the family systems domain have proposed various theoretical frameworks; one such framework is the family systems theory. Family cohesion, as a critical dimension of family systems theory, possesses the capacity to impact children and, subsequently, dictates their behavioral responses to their environment and their handling of challenging situations ([Lehto et al., 2012](#)). Family cohesion has been delineated as an emotional sense of closeness among family members.

According to this perspective, two attributes associated with familial cohesion encompass commitment and shared time together. The cohesion among family members has been identified as a significant contributor to mental health ([Sutter et al., 2014](#)) and physical health ([Bostean, 2010](#)); as evidenced by findings from numerous studies illustrating a positive correlation with children's academic achievement ([Oljača et al., 2012](#)), psychological adjustment ([Sbicigo & Dell'Aglio, 2012](#)), academic resilience ([Kim & Yoo, 2010](#)), academic adjustment ([Johnson et al., 2010](#)), and overall well-being ([Kamaruddin & Sa'ad, 2015](#)).

The affectionate dynamic existing between parents and their offspring is instrumental in influencing children's academic performance, with the reciprocal communication with parents serving as a foundational mechanism through which children assimilate knowledge about their environment. A lack of parental sensitivity towards their children's manifestations of distress or a failure to provide adequate support engenders a pervasive sense of insecurity within the child, thereby impeding their ability to communicate effectively with peers. Children who experience parental rejection, neglect, or are exposed to familial discord are statistically more inclined to exhibit aggressive behavioral patterns. Parents who engage in neglectful practices demonstrate a lack of attentiveness to their child's needs and maintain minimal expectations regarding their child's development. The establishment and sustenance of relational bonds between parents and children are pivotal in fostering robust interactions that significantly enhance mutual understanding and acceptance, as posited by [Popov and Ilesanmi \(2015\)](#). The interaction between parents and children constitutes an initial foray into the realm of child communication and represents a crucial and essential relationship for the cultivation of security and affection, characterized by a unique amalgamation of behaviors, emotions, and anticipations specific to the dyadic relationship between a parent and their child ([Carnes-Holt, 2012](#)). In terms of its significance, a preponderance of researchers has concluded that familial factors, particularly parental behaviors exhibited during childhood, play a critical role in the manifestation of behavioral issues both in childhood and later in adulthood, as children often reflect the behaviors of their parents, with a child's conduct serving as a response to various environmental stimuli, especially those emanating from parental actions ([Runcan, 2012](#)). The tension and conflict experienced between parents and adolescents during the adolescent phase can be described as a dual phenomenon, encompassing overt behavioral discrepancies between individuals, including

physical altercations, disputes, and disagreements ([Gans & Johnson, 2016](#)). The nature of conflict within familial relationships diverges from other forms of interpersonal discord due to the inherent characteristics of families, which are marked by sustained, intimate relationships that evolve over time and across various developmental contexts. For instance, conflict between parents and children in early childhood is often characterized by physical restraint and control ([Altiere & Von Kluge, 2009](#)), whereas conflict during adolescence is more typically associated with verbal altercations rather than physical confrontations. The quality of parent-adolescent relationships tends to deteriorate during the adolescent years as compared to parent-child relationships, and this decline in relational quality is evidenced by a decrease in parental satisfaction regarding adolescent conduct as the level of conflict escalates ([Grevenstein et al., 2019](#)).

Over the past two decades, advancements in Internet technology have significantly enhanced the convenience of contemporary life. Nevertheless, excessive and detrimental engagement with the Internet has the potential to precipitate severe issues, including physical and psychological disorders, thereby undermining an individual's psychosocial functioning ([Jia et al., 2017](#)). The detrimental utilization of the Internet can lead to dependencies that, in extreme cases, disrupt the daily routines of users. Consequently, individuals often invest substantial amounts of time in Internet usage and experience feelings of anxiety and restlessness in the absence of Internet access ([Donga & Zindiye, 2018](#)). Meanwhile, adolescents are particularly vulnerable to detrimental Internet usage due to the underdevelopment of the prefrontal cortex and the cortical monoaminergic system, both of which are intricately linked to motivation, impulsivity, and the propensity for addiction, thereby resulting in adverse outcomes during adulthood ([Vadlin et al., 2016](#)). The incidence of this disorder has been observed to be more pronounced in male adolescents; however, the phenomenon of excessive Internet use is prevalent among both female and male adolescents, particularly during the developmental phase of adolescence ([Vadlin et al., 2016](#)). Consequently, the detrimental use of the Internet among adolescents has emerged as a significant issue in recent scholarly discourse. A variety of research endeavors have explored the underlying factors contributing to harmful Internet usage in adolescents and young adults, highlighting diverse concepts and theoretical frameworks. The current investigation scrutinized the correlation and distinctions between familial structures and the quality of parent-child

relationships concerning harmful Internet usage in adolescents identified as experiencing Internet-related harm and those classified as normative students.

## Material and Methods

The current investigation constitutes a correlational analysis aimed at forecasting group affiliation (internet-affected students versus typical students) and establishing a discriminant equation wherein, through the application of discriminant analysis methodology and based on the interrelationships among the constructs, a differentiation is made between the two cohorts of internet-affected students and typical students, thereby facilitating the classification of new groups. The demographic scope of the research encompasses all male and female students enrolled in the second year of high school attending educational institutions in Shiraz during the academic year 2018-2019. The participants in this study comprise 120 students, categorized into two distinct groups. The first group is composed of 30 male and 30 female students exhibiting detrimental internet usage, selected through purposive sampling. The second group consists of 60 typical students, divided evenly into 30 males and 30 females, who are matched with the first group according to age, educational attainment, parental educational background, and relative socio-economic standing. This sample is derived from the Internet abusive use questionnaire, which was administered on a broader scale, and two segments representing 25% high and 25% low harmful internet usage were designated as the two sample groups. In this analysis, three questionnaires—namely the Internet abusive use questionnaire, the Parent-Child Relationship Scale, and the Family Cohesion Scale—were employed to assess the relevant variables.

## Instrument

**Internet Abusive Use Questionnaire (IAUQ):** This scale is one of the newest self-report scales for this field, developed by [Calvo-Francés \(2016\)](#). This questionnaire has 12 items and 2 components of functional impairment and irritability, and is scored using the Likert method. Scores are on a five-point scale from completely disagree (0) to completely agree (4). Higher scores in this questionnaire indicate abuse Internet use. In Iran, its Persian version has been translated and back-translated by [Mottaghi and Safaie \(2017\)](#). The questionnaire was administered to 318 students of Yazd State University after translation to examine factor analysis, concurrent validity, Cronbach's alpha, and confirmatory factor analysis. [Mottaghi and Safaie \(2017\)](#) reported in their

study that the overall Cronbach's alpha was 0.91 and the convergent validity was 0.82. After examining the content validity, confirmatory factor analysis was used to examine the construct validity, and the results indicated that the construct validity was high. Therefore, the validity and reliability of this questionnaire are confirmed.

**Parent-Child Relationship Survey (PCRS):** PCRS was designed by [Fine et al. \(1985\)](#). This scale has two forms: one to measure the child's relationship with the mother and one to measure the child's relationship with the father. The validity of this subscale was obtained using the Cronbach's alpha method. The validity of the scale using Cronbach's alpha method was obtained from 0.89 to 0.74 for the subscales related to the father, and from 0.96 for the total scale related to the father. Also, Cronbach's alpha coefficients were obtained from 0.64 to 0.94 for the subscale related to the mother and from 0.96 for the total scale related to the mother, indicating good internal consistency. In the study of [Fine et al. \(1985\)](#) confirmatory factor analysis was used to determine the validity of this scale. The results of confirmatory factor analysis showed high and good correlation between the items. In the study of [Mirzaei et al. \(2016\)](#) which was conducted in Iran, Cronbach's alpha coefficients were obtained from 0.79 to 0.91 for the subscales related to the father; from 0.61 to 0.91 for the subscales related to the mother and from 0.92 for the overall relationship.

**Family Cohesion Questionnaire (FCQ):** This questionnaire is based on the theoretical foundations of family cohesion, inspired by the hybrid model ([Olson et al., 1979](#)) and developed by Razavieh and Samani. This questionnaire has 28 questions through which the level of family cohesion can be determined and the solidarity between family members, which is the most important element that creates family cohesion, can be determined. This questionnaire is designed as a Likert scale. We give scores from strongly disagree (1) to strongly agree (5). The maximum score that can be obtained in this questionnaire is 140 and the minimum is 28. Research by Razavieh and Samani regarding this scale based on 8 factors (cohesion with father, mother, duration of interaction, location, decision-making, emotional connection, marital relations and parent-child relationship) indicated the adequacy of this scale for assessing the individual's solidarity with parents. The alpha coefficient for the entire scale was 0.90 and the validity for the entire scale was reported to be 0.78.

The results were expressed as mean and standard deviation (mean  $\pm$  SD) for quantitative variables and as percentages for categorical qualitative variables. Mean, standard deviation, minimum and

maximum were used to display quantitative variables (patients' age, etc.), and frequency and frequency percentage were used for qualitative variables. The normality of data distribution was examined using the Kolmogorov-Smirnov test. If the data have a normal distribution, it is possible to use a parametric test (independent t-test), and otherwise, a nonparametric test should be used. The chi-square test was used to compare qualitative variables. A significant level of less than 0.05 was considered. SPSS version 23 software was used for statistical analysis of the data.

## Results

In this section, descriptive findings are presented first, followed by findings related to the research hypotheses. In order to analyze the data, the discriminant analysis statistical test was used simultaneously. Information related to descriptive findings is presented in Table 1. This table shows information related to the mean and standard deviation of the predictor variables for students affected by the Internet and normal students.

**Table 1.** Mean, standard deviation, and validity of variables by group

Variable		Typical students			Internet abusive students		
		Mean	SD	Cronbach Alpha	Mean	SD	Cronbach Alpha
Father-child relationship	Positive affect	86.35	18.39	0.809	50.42	12.31	0.702
	Integration	33.13	3.52	0.825	25.81	4.62	0.826
	Dialogue	37.32	4.93	0.760	23.07	5.13	0.723
	Anger	8.82	3.69	0.799	22.80	4.96	0.713
Mother-child relationship	Positive affect	96.65	19.50	0.737	49.62	10	0.758
	Role confusion	15.71	4.06	0.753	24.18	5.30	0.766
	Identification	32.83	3.94	0.833	27.26	6.59	0.799
	Dialogue	36.59	7.93	0.690	21.78	6.30	0.723
Family cohesion	Family cohesion	61.10	10.19	0.752	37.71	10.70	0.765

As can be seen in Table 1, the mean and standard deviation of the variables of positive affect, anger and role confusion, integration and identification, and dialogue and communication are listed separately for parents and also the variable of family cohesion in students affected by the Internet and normal students. The results indicate that the variables of quality of parent-child relationships and family cohesion are lower in students affected by the Internet than in normal students.



**Table 2.** Conventional discriminant function and important information of the function by simultaneous discriminant analysis method (9 predictor variables)

Discriminant function information	Discriminant analysis Simultaneous method
Eigenvalue	11.36
Conventional correlation	0.959
Eta coefficient	0.746
Wilks' lambda	0.081
Chi square	511.810
DF	9
P	0.001
Typical students group center of gravity	-3.49
Internet abusive students group center of gravity	3.49
Group membership prediction	99.5 %
Kappa coefficient	0.631
Kappa coefficient Sig.	0.001

The research hypothesis states that the linear combination of parent-child relationships and family cohesion predicts Internet abusive use in students. The data in Table 2 are directly related to the research hypothesis, and the data in Tables 3 and 4 are indirectly related to the research hypothesis. The simultaneous analysis method was used to examine the combined hypothesis. As shown in Table 2 (in simultaneous discriminant analysis where the combination of 9 variables was entered into the analysis), considering the small Wilks lambda value and large chi-square and the significance level of  $P < 0.001$ , the obtained discriminant function has good discriminatory power to explain the variance of the dependent variable, namely group membership (in the two levels of students affected by the Internet and normal students). Therefore, the research hypothesis is confirmed. Also, to know the variables that remained by stepwise discriminant analysis method, Table 3 is presented. As explained, by performing stepwise discriminant analysis and presenting 9 predictor variables, 6 variables remained and entered the analysis. Information about these 6 predictor variables is presented in Table 3.

**Table 3.** Stepwise discriminant analysis regression analysis with Wilks' lambda (6 predictor variables)

Step	Entered	N of variable	Wilks' lambda	Statistic	DF1	DF2	P
1	Father's anger	1	-	863.54	1	208	0.001
2	Mother's role confusion	2	0.135	662.16	2	207	0.001
3	Relationship with the father	3	0.105	586.92	3	206	0.001
4	Relationship with the mother	4	0.087	539.49	4	205	0.001
5	Family cohesion	5	0.084	443.31	5	204	0.001
6	Mother's affection	6	0.083	375.87	6	203	0.001



Stepwise discriminant regression analysis was performed on 9 predictor variables (including family cohesion, maternal affection, maternal role confusion, identification with mother, maternal relationship, paternal affection, paternal anger, paternal involvement, and paternal relationship) to predict the likelihood of Internet abusive use in students, and after presenting 9 variables, 6 variables were allowed to enter the regression equation. In the first step, the father's anger variable; in the second step, the mother's role confusion variable; in the third step, the relationship with the father; in the fourth step, the relationship with the mother; In the fifth step, family cohesion and in the sixth step, mother's affection were entered into the analysis, and the F value for each of the 6 variables was significant at the  $P > 0.001$  level. It should be noted that these 6 variables, in addition to having a simple significant correlation with the group variable, also have a significant discriminant correlation with the group variable.

**Table 4.** Standard, non-standard, structural coefficients and classification coefficients of the discriminant function in the simultaneous method

Predictors	Function in the simultaneous method		
	Standard function coefficients	Non-Standard function coefficients	Structural coefficients
Family cohesion	-0.165	-0.016	-0.333
Mother affection	-0.198	-0.013	-0.452
Mother role confusion	0.671	0.142	0.267
Mother identification	0.099	0.018	-0.153
Relationship with mother	-0.302	-0.042	-0.308
Father affection	0.032	0.002	-0.342
Father's anger	0.635	0.151	0.604
Father integration	-0.160	-0.036	-0.340
Relationship with father	-0.393	-0.079	-0.437
Constant	-	0.025	-

The structural coefficients of the discriminant function show the degree of correlation of each variable with the function (group predicted score or discriminant score). In the simultaneous method, father's anger, role confusion, relationship with father, relationship with mother, family cohesion and mother's affection show discriminant function correlation, and the other variables,

despite having a simple significant relationship with the dependent variable, do not contribute to the improvement of the function.

## Discussion

The current investigation sought to elucidate the discriminant equation, as well as familial indicators (specifically, the parent-child relationship and family cohesion), as predictor variables for distinguishing between students exhibiting maladaptive Internet usage and those categorized as normative. The empirical findings of this study indicated that the variables encompassing paternal anger, maternal role confusion, father-child communication, mother-child communication, family cohesion, and maternal affection, which were derived from family indicators, possess substantial predictive power regarding the classification of students impacted by Internet misuse versus their normative counterparts.

The conventional correlation coefficient for these variables in differentiating groups through simultaneous method discriminant analysis was determined to be 0.959. The results suggest that after the introduction of nine variables, the aforementioned variables of paternal anger, maternal role confusion, father-child communication, mother-child communication, family cohesion, and maternal affection were subsequently permitted to be incorporated into the regression equation. The outcomes indicated that these six variables were proficient in forecasting distinctions between students engaged in harmful Internet usage and those considered normative.

The findings of this investigation are congruent with the research conducted by [Wang et al. \(2021\)](#), [Xiuqin et al. \(2010\)](#), [Harpaz and Grinshtain \(2020\)](#) and [Li et al. \(2014\)](#). As elucidated in this study, in the initial phase, the variables of parental anger and role confusion exerted disparate influences on adolescents' maladaptive Internet usage. Consequently, it appears that particular characteristics inherent in parental behaviors and interactions with their offspring may engender varying mechanisms that affect children's engagement with the Internet. In elucidating the correlation between paternal anger and maladaptive Internet usage, it is noteworthy to mention that the presence of certain familial issues and interpersonal discord, predominantly with parents, particularly concerning the nature of father-child interactions marked by aggression, serves as a predisposing factor for adolescents' harmful engagement with the Internet and other emergent communication technologies. However, this relationship is bidirectional; excessive and

maladaptive utilization of these novel communication modalities, in turn, compromises the quality of familial interactions and undermines familial functions ([Senormancı et al., 2014](#)).

Furthermore, regarding the association between paternal anger and adolescents' maladaptive Internet usage, it can be posited that a father who exhibits inappropriate and angry behavior towards his children generally lacks effective strategies for interaction with them, tends to reject them, and fails to provide warm support and acceptance. Such characteristics cultivate a family environment rife with disorder, discord, and conflict. Under these circumstances, dysfunctional father-adolescent relationships represent a significant source of relational disturbances, wherein such negative interactions between parents and children contribute to the emergence and exacerbation of pathological behaviors among adolescents, including harmful Internet usage ([Kakabaraei & Moradi, 2017](#)). Furthermore, in elucidating the connection between the confusion surrounding the maternal role and detrimental Internet usage, it can be posited that adolescents hailing from familial environments characterized by emotional detachment—stemming from the maternal role's ambiguity due to a deficiency in interpersonal relationships and emotional attunement, diminished interaction among family members, inadequate regulation and oversight of individual behaviors, and an incapacity to resolve familial challenges—subconsciously recognize the familial dysfunction. Conversely, families that fail to provide adequate social support render their children susceptible to various emotional, behavioral, and functional adversities, including isolation, a pronounced desire for solitude, neglect of personal and familial responsibilities, and disruptions in academic, social, and personal domains, all of which manifest as indicators of harmful Internet utilization. Moreover, in explicating the association between paternal communication dynamics and detrimental Internet usage, it is noteworthy that, although the Internet is a ubiquitous technology utilized by adolescents on a daily basis, parents (fathers) bear significant responsibility in mitigating the risks associated with Internet use through their parenting methodologies and the nature of their verbal and non-verbal interactions.

Additionally, in clarifying the significance of maternal communication and interaction, it can be asserted that a mother who fosters intimate and affectionate relationships with her offspring endeavors to attend to the needs of her children, regardless of gender, and articulates her expectations and aspirations while simultaneously supervising and regulating her children's behavior, thereby instituting pragmatic rules and guidelines within the household ([Rathore et al.,](#)

[2017](#)). In examining the interplay between familial cohesion and harmful Internet use, one can deduce that elevated familial cohesion engenders enhanced solidarity among family members, thereby enabling parents to maintain heightened awareness of the social and educational endeavors pursued by adolescents. Consequently, it can be surmised that within families exhibiting greater cohesion, parents possess superior insight into their children's educational status and social functionalities, which serves to function as both a monitoring mechanism and a protective barrier against adolescents' propensity to engage in deleterious behaviors via the Internet and cyberspace ([Santos et al., 2017](#)).

As evidenced by this investigation, the positive affect exhibited by mothers exerts a distinct influence on the detrimental utilization of the Internet. Consequently, it appears that there exist particular characteristics within the behavioral patterns and interactions of mothers with their offspring that may engender disparate mechanisms of impact on children's Internet usage. A study executed by [Syeed-Mousavi et al. \(2014\)](#) demonstrated that during the early stages of adolescence, the maternal figure serves as the paramount source of authentic self-disclosure, encouragement, and support for children. In elucidating the correlation between maternal positive affect and the harmful Internet use observed in children, it is noteworthy that mothers play a pivotal role in the transmission of values, enhancement of morality, and modification of behavior.

Among the constraints of the present study, it should be noted that the findings are cross-sectional and confined to junior high school students in Shiraz, thus necessitating caution when extrapolating these results to other educational institutions and centers. Furthermore, the findings of this investigation may be susceptible to the influence of personality variables, coping strategies, social determinants, peer relationships, and socioeconomic status, which represent additional limitations of this study.

**Data availability statement**

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

**Ethics statement**

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

**Author contributions**

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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**Conflict of interest**

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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