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# ALTERATIONS IN SOCIAL BEHAVIOR AND QUALITY OF LIFE IN INDIVIDUALS WITH VIDEO GAME ADDICTION: THE ROLE OF ATTACHMENT STYLES AND SOCIAL COMPETENCE

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## ABSTRACT

Video game addiction has increasingly been recognized as a behavioral disorder with significant consequences for social functioning and overall quality of life. This literature review synthesizes theoretical perspectives from John Bowlby's attachment theory and Hinsch and Pfingsten's social competence model to examine the psychosocial factors contributing to the development of video game addiction and subsequent alterations in social behavior. Attachment theory posits that insecure attachment styles—avoidant, anxious/ambivalent, and disorganized—predispose individuals to difficulties in forming and maintaining close interpersonal relationships. The social competence model emphasizes the interpersonal skills required for effective social interaction; deficits in these skills may lead individuals to seek alternative forms of social engagement, such as online gaming environments, which offer lower social demands and greater controllability. This paper explores how the interplay between attachment insecurity and low social competence can serve as a vulnerability pathway toward excessive gaming. Prolonged engagement in video games may further exacerbate social withdrawal, reduce offline communication skills, and negatively affect life satisfaction. By integrating these frameworks, the review provides a comprehensive perspective on the psychosocial mechanisms underlying video game addiction and outlines implications for prevention and intervention, such as early attachment-based interventions and social skills training. While attachment theory and social competence have been individually applied to interpersonal difficulties, their combined use in explaining behavioral addictions remains limited. This review addresses this gap by proposing a unified framework highlighting how interaction between attachment insecurity and social competence deficits shapes vulnerability to excessive gaming.

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## KEYWORDS

Video Game Addiction, Attachment Styles, Social Competence, Quality of Life

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## Introduction

Video games have become a central component of contemporary leisure culture, engaging millions of individuals worldwide across different age groups (Statista, 2023). While gaming is often associated with entertainment, skill development, and social connection (Granic, Lobel, & Engels, 2014), excessive engagement has raised concerns regarding its potential to develop into problematic or addictive patterns of behavior. The World Health Organization formally recognized gaming disorder in the International Classification of Diseases, 11th Revision (ICD-11) under the diagnostic category of Gaming Disorder (World Health Organization, 2020). According to ICD-11, gaming disorder involves impaired control over gaming, prioritization of gaming over other activities, and continuation of gaming despite negative consequences, leading to significant impairment in personal, social, or occupational functioning.

As gaming behaviors become increasingly common, it is important to explore not just the clinical and behavioral aspects of the disorder, but also the social and psychological factors that contribute to it (Kuss & Griffiths, 2012). Previous studies have shown that excessive video gaming can be linked to social isolation, poor academic or job performance, and a lower overall quality of life (Lemmens, Valkenburg, & Peter, 2011). However, a theoretical gap remains in explaining *why* some individuals become particularly vulnerable to developing addictive gaming patterns, while others maintain balanced use without significant harm (Kardefelt-Winther, 2017). In particular, personality-related factors and deficits in social functioning have emerged as especially promising domains for more extensive and in-depth exploration, as they may provide valuable insights into the underlying mechanisms that contribute to individual behavioral patterns and mental health outcomes (Montag et al., 2012).

John Bowlby's attachment theory provides a valuable framework for understanding how early relational experiences shape patterns of emotional regulation, interpersonal trust, and coping strategies (Mikulincer & Shaver, 2010). Insecure attachment styles—such as avoidant, anxious-ambivalent, or disorganized—are often linked to difficulties in building and maintaining close social relationships (Bartholomew & Horowitz, 1991), which may drive individuals toward alternative environments that offer a sense of control and acceptance, such as online gaming communities (Schimmenti et al., 2012). Complementing this perspective, Hinsch and Pfingsten's social competence model highlights the role of interpersonal skills in enabling effective communication, conflict resolution, and social integration (Hinsch & Pfingsten, 2007), and deficits in these skills may further reinforce tendencies to withdraw from offline social contexts, leading individuals to rely on gaming as an alternative form of social interaction (Schimmenti et al., 2012; Stavropoulos, Gentile, & Motti-Stefanidi, 2016).

This paper seeks to integrate attachment theory and the social competence framework to provide a more comprehensive understanding of the psychological and social mechanisms that contribute to video game addiction. Attachment theory emphasizes the importance of early emotional bonds in shaping patterns of emotional regulation and interpersonal behavior (Bowlby, 1969; Ainsworth, 1979), while the social competence framework focuses on the development of effective social skills that enable individuals to form and maintain healthy relationships (Rubin et al., 2006). Bringing these two perspectives together allows for a deeper exploration of how interpersonal experiences and social functioning jointly influence vulnerability to maladaptive behaviors such as excessive gaming.

Specifically, the paper examines how insecure attachment styles—characterized by anxiety, avoidance, or disorganized relational patterns—can lead to deficits in social competence, including difficulties in empathy, communication, and emotional regulation (Mikulincer & Shaver, 2007; Cassidy & Shaver, 1999). These deficits in social competence may, in turn, increase an individual's reliance on video games as a substitute for real-world social interaction and a means of emotional regulation (Schimmenti et al., 2012). Over time, such patterns can reinforce avoidance of real-life social contexts and contribute to addictive gaming behaviors, resulting in altered social functioning and a reduced quality of life.

Building on this theoretical integration, the discussion extends beyond academic inquiry to emphasize its practical implications. Understanding the interplay between attachment insecurity and social competence deficits can inform the development of targeted prevention programs and therapeutic interventions (Eichenberg et al., 2018). These approaches may focus on fostering secure attachment relationships, enhancing interpersonal and emotional regulation skills, and encouraging healthier coping mechanisms. In this way, the integration of attachment theory and the social competence framework provides both a theoretical and practical foundation for understanding and addressing video game addiction.

## Materials and Methods

A systematic literature search was conducted to identify relevant studies examining the relationships between video game addiction, attachment styles, and social competence. The databases PsycINFO, PubMed, and Google Scholar were selected due to their comprehensive coverage of psychological, medical, and interdisciplinary research. The search strategy included combinations of keywords such as “video game addiction,” “gaming disorder,” “Internet gaming disorder,” “attachment theory,” “attachment styles,” “social competence,” “behavioral addiction,” and “quality of life,” using Boolean operators (e.g., AND, OR) to refine results.

Studies were included if they met the following criteria: (1) published in peer-reviewed journals; (2) written in English or German; (3) addressed video game addiction or problematic gaming, as defined by ICD-11 (World Health Organization, 2020) or DSM-5 criteria (American Psychiatric Association, 2013); and (4) explicitly examined attachment theory, attachment styles, or social competence in relation to gaming or behavioral addictions. Studies were excluded if they focused solely on substance addictions or lacked empirical or theoretical relevance to the research objectives.

The selected studies were systematically reviewed and organized into thematic categories corresponding to the two theoretical frameworks: (1) attachment theory and vulnerability to behavioral addictions (Schimmenti & Caretti, 2010; Monacis et al., 2017; Schimmenti et al., 2014), and (2) social competence deficits and their relationship to gaming behavior (Caplan, 2007; Lo, Wang, & Fang, 2005; Gentile et al., 2011; Segrin & Flora, 2018). A thematic synthesis approach was applied, whereby findings were coded and grouped into overarching themes (Thomas & Harden, 2008). This method facilitated integration of the theoretical perspectives and identification of shared mechanisms linking insecure attachment and low social competence to the development and maintenance of video game addiction.

## Results

Epidemiological studies consistently indicate that gaming disorder affects a notable proportion of the population, though prevalence rates vary depending on diagnostic criteria and assessment tools (Petry, Rehbein, Ko, & O’Brien, 2015). Large-scale surveys report prevalence estimates ranging from 1% to 9% in general populations, with higher rates observed among adolescents and young adults (Mihara & Higuchi, 2017; Stevens et al., 2021). Males are generally found to be at greater risk than females, and cultural differences have been noted, with higher prevalence reported in East Asian countries compared to Western populations (Fam, 2018; Lopez-Fernandez, 2021).

Beyond prevalence estimates, increasing attention has been directed toward the psychological mechanisms that make certain individuals more vulnerable to gaming disorder. A growing body of research demonstrates that insecure attachment styles increase vulnerability to various addictive behaviors, including problematic gaming. Consistent with previous findings, individuals with anxious, avoidant, or disorganized attachment patterns appear more vulnerable to behavioral addictions, as these insecure styles are associated with maladaptive emotion regulation, relational insecurity, and reliance on gaming as a coping mechanism (Schimmenti & Caretti, 2010; Monacis et al., 2017).

While attachment theory emphasizes the emotional roots of maladaptive gaming, the social competence framework highlights behavioral and interpersonal factors that may reinforce such tendencies. Research drawing from Hinsch and Pflingsten’s social competence framework highlights that deficits in communication skills, conflict resolution, and social integration increase the likelihood of maladaptive coping strategies (Riggio, 1986). Empirical studies have demonstrated that individuals with low social competence often experience greater social anxiety, peer rejection, and reduced offline social support (Segrin & Flora, 2018; Caplan, 2007). These deficits have been shown to correlate with problematic gaming, where online environments are used as a substitute for challenging offline interactions (Lo, Wang, & Fang, 2005; Gentile et al., 2011).

Studies integrating personality and social factors suggest that insecure attachment and low social competence share overlapping effects in predisposing individuals to gaming disorder (Schimmenti, Passanisi, Gervasi, Manzella, & Famà, 2014; Caplan, 2005). The severity of internet gaming disorder has also been associated with problematic social media use, poor sleep quality, and increased psychological distress (Wong et al., 2020). Both frameworks highlight difficulties in forming secure, rewarding offline relationships, which may foster reliance on digital gaming as an alternative means of interaction and emotional regulation. Empirical evidence further indicates that individuals exhibiting both insecure attachment and low social competence are at particularly high risk for excessive gaming behaviors (Monacis, De Palo, Griffiths, & Sinatra, 2017).

Longitudinal and cross-sectional studies consistently report negative psychosocial consequences of video game addiction, including social withdrawal, reduced offline communication skills, impaired academic or occupational performance, and lower overall life satisfaction (Lemmens, Valkenburg, & Peter, 2011). Excessive gaming is further linked to sleep disturbances, loneliness, and reduced psychological well-being (Kuss & Griffiths, 2012; Kim & Davis, 2009). Collectively, these findings highlight the broader impact of gaming disorder on quality of life, extending beyond the individual to affect family relationships and community participation (Kuss, Griffiths, Karila, & Billieux, 2014; Weinstein & Lejoyeux, 2010).

### Discussion

The reviewed literature highlights a complex and bidirectional relationship between attachment insecurity, social deficits, and problematic gaming behavior. Insecure attachment styles and low social competence function as mutually reinforcing vulnerabilities that predispose individuals to excessive gaming (Schimmenti, Passanisi, Gervasi, Manzella, & Famà, 2014; Caplan, 2005). Individuals with insecure attachment are more likely to experience relational instability and heightened emotional sensitivity, while those with lower social competence often struggle to initiate and sustain satisfying interpersonal relationships (Mikulincer & Shaver, 2010). Together, these psychosocial risk factors contribute to a heightened reliance on video games as a compensatory strategy for managing emotional distress and achieving a sense of social connection (Schimmenti, Guglielmucci, Barbasio, & Granieri, 2012; Kuss & Griffiths, 2012).

Consequently, the very features of digital gaming environments—structured interaction, social feedback, and emotional safety—become particularly attractive to individuals facing such interpersonal and emotional vulnerabilities.

Gaming environments provide structured, predictable, and controllable social interactions that can serve as appealing alternatives to offline relationships. These spaces allow individuals to experience mastery, achievement, and belonging in ways that may feel safer or more manageable than face-to-face social contexts (Caplan, 2006; Kuss & Griffiths, 2012). For socially anxious or isolated players, online interactions reduce the perceived risk of rejection and provide a sense of agency and control over social exchanges (Caplan, 2006). However, the same characteristics that make gaming emotionally protective may also perpetuate avoidance of offline social challenges, reinforcing patterns of avoidance and reliance on digital interactions (Kardefelt-Winther, 2014).

Empirical studies support the cyclical nature of these psychological and social patterns, showing that prolonged gaming reinforces vulnerabilities over time. Prolonged engagement in excessive gaming can exacerbate existing social deficits, reduce motivation for real-world interaction, and negatively impact overall psychological well-being (Lemmens, Valkenburg, & Peter, 2011; Paulus, Ohmann, von Gontard, & Popow, 2018). Over time, this cycle of avoidance and reinforcement may entrench maladaptive coping mechanisms, diminishing quality of life and making recovery more difficult. As King and Delfabbro (2018) highlight, effective intervention for Internet gaming disorder should target not only the observable gaming behaviors but also the underlying psychological and social vulnerabilities that contribute to the disorder. Timely recognition of attachment insecurity and social competence deficits is crucial for interrupting this self-perpetuating cycle and fostering more adaptive forms of emotional regulation and social interaction.

Building on these empirical insights, the discussion now turns to the theoretical foundations that help explain why certain individuals are more prone to developing such maladaptive gaming patterns. Attachment theory, as outlined by Fitton (2013), emphasizes the lasting impact of early relational experiences on emotional regulation and coping strategies, highlighting why individuals with insecure attachment may be particularly inclined to seek alternative forms of social connection, such as online gaming. Complementing this perspective, Riggio's (1986) social competence model underscores the importance of practical interpersonal skills for effective functioning in social contexts, suggesting that deficits in these abilities increase reliance on virtual environments where social interactions are structured and more controllable. Empirical research further supports the convergence of these vulnerabilities, indicating that children and adolescents who combine insecure attachment with limited social competence are at heightened risk of developing maladaptive gaming behaviors (Kuss & Griffiths, 2012). Integrating these perspectives provides a more comprehensive understanding of gaming disorder, moving beyond purely cognitive-behavioral accounts to consider how early relational experiences and social skill deficits interact to shape susceptibility. This theoretical lens also emphasizes the potential value of interventions that simultaneously address emotional regulation and social competence to reduce risk and promote adaptive engagement in both online and offline social environments.

While this integrated framework advances a more holistic view of gaming disorder, it also highlights the need to critically assess the methodological foundations of the existing research. Research on gaming disorder has advanced our understanding of its psychosocial underpinnings and potential classification as a behavioral addiction, providing valuable theoretical and empirical insights (Griffiths, Kuss, Pontes, & Billieux, 2016). Nevertheless, several methodological limitations remain. A large proportion of studies rely on cross-sectional designs, which constrain the ability to draw causal conclusions about the relationships between social vulnerabilities and problematic gaming (Lemmens, Valkenburg, & Peter, 2011; Paulus, Ohmann, von Gontard, & Popow, 2018). Additionally, substantial variability exists in how gaming disorder is defined and measured, with some studies employing DSM-5 or ICD-11 criteria, while others use less standardized instruments, which complicates comparisons and synthesis across findings (Petry, Rehbein, Ko, & O'Brien, 2015; King & Delfabbro, 2019). Cultural variations in gaming habits, attachment patterns, and social norms are also underexplored, limiting the generalizability of the evidence base.

Despite these limitations, recent research has made notable progress, particularly through interdisciplinary approaches that integrate psychological, clinical, and sociological perspectives, enriching theoretical frameworks and supporting a more comprehensive understanding of gaming disorder (Kuss & Griffiths, 2012; Griffiths et al., 2016). Collectively, these studies highlight both the promise and the current methodological constraints in the field. They emphasize the need for longitudinal designs, standardized diagnostic criteria, and cross-cultural investigations to fully capture the complex interplay between individual vulnerabilities, gaming behaviors, and psychosocial outcomes (King & Delfabbro, 2019). Understanding these methodological strengths and gaps is crucial not only for advancing research but also for informing interventions and policy decisions aimed at mitigating gaming disorder.

The combined risk model of gaming disorder carries significant implications for clinical intervention, prevention, and policy-making. Therapeutic approaches should extend beyond mere behavioral management to target the core psychological and social vulnerabilities, particularly attachment insecurities and deficits in social competence. These factors not only predispose individuals to excessive gaming but also influence the persistence and severity of gaming-related problems. Recent studies have emphasized the critical role of these factors in the development and maintenance of gaming disorder, highlighting the need for comprehensive approaches that address both behavioral symptoms and underlying vulnerabilities (Zaheer et al., 2025).

Recent research further underscores the mediating role of attachment patterns in the emergence of gaming disorder, demonstrating the importance of focusing on relational and emotional vulnerabilities in both prevention and intervention strategies. Wimmer et al. (2025) show that primary emotional tendencies influence gaming disorder indirectly through insecure attachment styles, suggesting that individuals with maladaptive attachment patterns are particularly susceptible to excessive gaming as a means of emotional regulation. Clinically, these findings indicate that interventions addressing attachment-related difficulties—such as attachment-based therapy, emotionally focused interventions, or integrated psychotherapeutic approaches—may improve treatment outcomes by targeting the emotional vulnerabilities that drive problematic gaming behaviors. Moreover, incorporating social skills development into therapy can help individuals build confidence and competence in offline social interactions, thereby reducing reliance on online environments as a compensatory mechanism. Building on these clinical insights, preventive approaches can similarly target underlying vulnerabilities before problematic gaming behaviors become entrenched.

From a preventive standpoint, early interventions that promote secure attachment and adaptive emotional regulation in children and adolescents are likely to reduce the risk of developing gaming disorder. Educational programs that teach effective interpersonal skills, coping strategies, and emotional awareness can serve as protective factors, equipping young people with the tools to navigate social challenges without overreliance on digital media. For example, the STRYV365 program, which integrates game-based learning to enhance social-emotional skills, has demonstrated efficacy in improving emotional regulation and coping mechanisms among youth (Liverman et al., 2025). By fostering emotional awareness and resilience, such programs help individuals manage stressors more effectively, thereby reducing the likelihood of maladaptive behaviors such as excessive gaming (Liverman et al., 2025). Additionally, attachment-related vulnerabilities have been identified as key risk factors for gaming disorder, with insecure attachment patterns predisposing adolescents to rely on gaming as a compensatory strategy for unmet emotional needs (Benarous et al., 2019). Interventions that strengthen attachment security, such as family-based or attachment-informed approaches, can mitigate these risks by improving emotional regulation and interpersonal functioning. Implementing these preventive measures within school curricula, community programs, or family interventions can create supportive environments that foster emotional well-being, resilience, and healthy social engagement,

ultimately decreasing the likelihood of developing gaming-related problems (Liverman et al., 2025; Benarous et al., 2019)

At the policy level, recognizing gaming disorder as a public health concern emphasizes the need for coordinated, multi-level strategies. These strategies should include prevention programs in schools, parental guidance initiatives, and the promotion of responsible game design practices that minimize addictive potential. Policies informed by attachment theory, social competence research, and behavioral addiction studies can simultaneously address individual vulnerabilities and environmental risk factors, fostering healthier engagement with digital media and reducing the broader societal impact of gaming disorder (World Health Organization, 2020; Griffiths, Kuss, Pontes, & Billieux, 2016). Collectively, these clinical, preventive, and policy-oriented approaches highlight the necessity of comprehensive, evidence-based frameworks to mitigate the multifaceted risks associated with gaming disorder.

### Conclusions

This review stresses the pivotal role of psychosocial factors—particularly insecure attachment styles and deficits in social competence—in shaping vulnerability to gaming disorder. Research consistently indicates that individuals with insecure attachment often face challenges in emotional regulation and forming stable interpersonal relationships, which can drive them to seek solace and connection in digital environments. For instance, adolescents exhibiting attachment anxiety may turn to gaming to compensate for unmet needs for closeness and reassurance, thereby increasing their susceptibility to gaming disorder (Gregorini et al., 2025; Benarous et al., 2019). Similarly, avoidant attachment patterns can lead individuals to withdraw from real-life interactions, using online gaming as a safe and controllable social space where relational demands are less threatening. These tendencies highlight how attachment insecurity shapes both the initiation and maintenance of excessive gaming behaviors.

Deficits in social competence further exacerbate this vulnerability. Individuals with limited interpersonal skills may struggle to navigate offline social contexts, experiencing difficulties in communication, conflict resolution, and forming supportive peer relationships. Consequently, gaming environments become attractive alternatives, offering structured interactions, predictable feedback, and opportunities for achievement and social recognition (Caplan, 2006; Kuss & Griffiths, 2012). The combination of insecure attachment and low social competence forms a mutually reinforcing risk model, in which each factor amplifies the impact of the other, making disengagement from maladaptive gaming patterns more challenging. This framework explains why some adolescents are disproportionately at risk: their difficulties in emotional regulation and social functioning interact, creating a cycle in which online gaming fulfills emotional and social needs that are otherwise unmet in offline contexts.

The theoretical integration of Bowlby's attachment theory with Hirsch and Pfingsten's social competence framework offers a comprehensive lens for understanding the social, emotional, and personality dimensions of gaming disorder (Bowlby, 1969/1982; Hirsch & Pfingsten, 2007; Schimmenti, Passanisi, Gervasi, Manzella, & Famà, 2014). Attachment theory emphasizes the enduring influence of early relational experiences on coping strategies and emotional regulation, illustrating why individuals with insecure attachment may seek digital substitutes for connection and reassurance. In parallel, the social competence framework identifies practical interpersonal skills—such as empathy, assertiveness, and conflict resolution—as critical for navigating social environments. Deficits in these skills reduce opportunities for positive offline social interactions, increasing reliance on virtual environments where interactions are structured, predictable, and emotionally safer. Empirical evidence supports the convergence of these vulnerabilities, showing that adolescents who combine insecure attachment with limited social competence are at heightened risk for maladaptive gaming behaviors (Kuss & Griffiths, 2012).

Practically, these theoretical insights have significant implications for therapeutic and preventive strategies. Therapeutic interventions should extend beyond managing gaming behavior itself to target the underlying psychosocial vulnerabilities. Attachment-focused therapies—such as attachment-based family therapy or emotionally focused interventions—can strengthen relational security, enhance emotional regulation, and reduce dependence on digital compensatory strategies. Simultaneously, social skills training and cognitive-behavioral interventions can improve interpersonal competence, equipping individuals with tools to engage confidently and effectively in offline social contexts (King, Delfabbro, & Griffiths, 2010; Kuss & Griffiths, 2012). By addressing both relational insecurities and skill deficits, these approaches have the potential to break the cycle of maladaptive gaming, promote adaptive coping, and improve overall psychosocial functioning.

From a preventive perspective, early interventions targeting attachment security and social-emotional skills can reduce the risk of developing gaming disorder before maladaptive patterns become entrenched. As already discussed, programs such as STRYV365, which incorporate game-based learning to enhance emotional awareness, problem-solving, and social competencies, have demonstrated efficacy in fostering resilience and adaptive coping among youth (Liverman et al., 2025). Similarly, interventions that strengthen parent-child attachment, improve emotion regulation, and provide structured social learning experiences can mitigate vulnerabilities that predispose adolescents to gaming as a compensatory strategy (Benarous et al., 2019). Implementing such preventive measures in schools, community programs, and family-based initiatives creates supportive environments that encourage healthy social engagement, emotional well-being, and adaptive coping strategies, reducing reliance on online gaming for emotional fulfillment.

Future research should continue to explore the interplay between attachment insecurity, social competence deficits, and gaming disorder using longitudinal and experimental designs to clarify causal relationships (Lemmens, Valkenburg, & Peter, 2011; Schimmenti, Passanisi, Gervasi, Manzella, & Famà, 2014). Intervention studies that integrate attachment-focused and social skills-based approaches are particularly needed to evaluate their effectiveness in both clinical and preventive settings (King, Delfabbro, & Griffiths, 2010; Kuss & Pontes, 2019). Additionally, cross-cultural research can illuminate how societal norms, family structures, and cultural attitudes toward gaming influence the development and manifestation of gaming disorder, providing insight into culturally sensitive prevention and treatment strategies (Lopez-Fernandez, 2021; Fam, 2018).

In conclusion, addressing gaming disorder requires a dual focus on attachment and social competence, recognizing the intertwined roles of emotional and interpersonal vulnerabilities in shaping maladaptive gaming behaviors. Theory-informed interventions and preventive programs that target these core psychosocial factors can reduce risk, strengthen adaptive coping, and improve quality of life for affected individuals. Moreover, integrating these insights into educational, clinical, and policy frameworks can facilitate a more comprehensive approach to mitigating the societal and psychological impacts of gaming disorder, ensuring that interventions are both evidence-based and contextually relevant (Bowlby, 1969/1982; Hirsch & Pfingsten, 2007; Kuss & Griffiths, 2012).

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