

Chemistry Between People: A Sum of Their Connections

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Have you ever felt a special “spark” with someone—an intense bond with a potential partner, friend, or colleague? If so, you probably thought you experienced “chemistry.” Literary references to interpersonal chemistry appeared as early as 1590, when English poet John Donne wrote about “love alchemy” in his eighth elegy, *The Comparison*:

*“Then like the Chymicks masculine equall fire,
Which in the Lymbecks warm wombe doth inspire
Into th’earths worthlesse durt a soule of gold,
Such cherishing heat her best lov’d part doth hold.”*

Since then, countless books, films, and TV shows have referred to interpersonal chemistry between characters. But the term doesn’t refer exclusively to romantic chemistry. For instance, chemistry is a common metaphor in sports and music, and even in business, academia, and scientific partnerships. However, despite its ubiquity and assigned value, interpersonal chemistry has remained relatively unexplored in the psychological literature, according to APS Fellow Harry T. Reis (University of Rochester) and Annie Regan and Sonja Lyubomirsky (University of California, Riverside) in a recent

[article in *Perspectives on Psychological Science*](#). To address this gap, Reis, Regan, and Lyubomirsky proposed a conceptual model of interpersonal chemistry.

Defining chemistry

When individuals experience chemistry, they experience their interaction as something more than the sum of their separate contributions. Interpersonal chemistry requires coordination, in that the interacting individuals share and match their goals and efforts, supporting each other in the process. Beyond this generic definition, Reis and colleagues' model emphasizes certain properties of interpersonal chemistry:

- **Chemistry is an emergent phenomenon.** Chemistry emerges from interactions rather than from the attributes, expectations, or biases of the involved partners. This might explain why online daters often struggle to predict whether chemistry will develop just from reading online descriptions of possible partners and why there is no scientific evidence for the effectiveness of matching algorithms in dating websites.
- **Chemistry is a relationship effect.** Chemistry can be related to liking, but it's broader than that: It encompasses the feeling that a given relationship is special and different from other relationships.
- **Chemistry is often embodied.** Several aspects of chemistry occur nonverbally or even outside of awareness. These aspects include eye contact, mimicry of facial and bodily expressions, and synchronous movements. Interpersonal chemistry can also be felt inside one's body.
- **Chemistry is different from other high-quality connections.** Relationships with family members, friends, coworkers, and even lovers can be productive and satisfying, but that does not mean they create chemistry. Similarly, an intense and immediate physical attraction might be conflated with chemistry, but relationships with chemistry have unique characteristics.

Experiencing chemistry

Reis and colleagues' Interpersonal Chemistry Model stipulates that chemistry encompasses behaviors (i.e., what chemistry "looks like") and perceptions (i.e., what it "feels like"). According to the model, the behavioral component involves a series of interactions in which two (or more) people express feelings, needs, desires, or goals that are met with understanding, appreciation, and support. Those behaviors, in turn, lead to the perception of chemistry, with cognitive (shared identity), affective (positive affect and attraction), and behavioral (perceived goal-relevant coordination) components.

Experiencing chemistry thus requires actual interactions. Reis and colleagues excluded from consideration the idea that people may experience chemistry at "zero acquaintance," or solely through awareness of other person's qualities. Instead, they proposed that chemistry involves repeated back-and-forth exchanges.

"As the interaction cycle unfolds, partners will often develop a substantial level of behavioral synchrony (e.g., linguistic matching, nonverbal synchrony, voicing similar thoughts and ideas)," Reis and colleagues wrote. The researchers propose that this sequence of expressive and responsive

behaviors often unfolds quickly and spontaneously, and thus chemistry can be felt in the first interactions. However, they believe that moments of connection must accumulate before enduring chemistry is felt and observed.

Although chemistry goes beyond individual characteristics, certain traits and goals influence its development. For instance, people high in attractiveness, warmth, and perspective-taking tend to be more likable, which can foster chemistry. Personal goals might also influence the experience of chemistry (e.g., desiring a new relationship or recruiting a fellow musician).

Finally, the Interpersonal Chemistry Model posits that perceptions of chemistry are influenced by people’s projections of their personal thoughts and beliefs onto others. Such projections might be most influential before partners have had a chance to have a series of connecting moments—that is, early in a relationship or when chemistry is momentary, felt instantaneously, or perceived by only one person.

Researching chemistry

To support their Interpersonal Chemistry Model, Reis and colleagues reviewed relevant research and identified primary and secondary constructs underlying different components of chemistry. The following table summarizes their analyses.

Element of chemistry model	Primary constructs	Secondary constructs
Repeated moments of connection	Perceived partner responsiveness Mutual-attentiveness component of rapport Positivity resonance Reciprocated liking High-quality connections Flow	Affective positivity component of rapport Attraction
Individuals' personal traits and goals	Individual differences Charisma	Flow Synchrony component of rapport
Perception of shared identity	Similarity Complementarity Inclusion of other in the self	Transference Pheromones
Affective positivity to other	Affective positivity component of rapport Attraction Spark	Pheromones Individual differences Charisma Reciprocated liking Similarity Complementarity Transference
Coordinated goal-relevant activity	Synchrony component of rapport Interdependence theory	Mutual-attentiveness component of rapport Flow Similarity Complementarity
Projection path	Projection Transference	

“Chemistry overlaps with a number of important theoretical and empirical constructs across several

psychological disciplines,” Reis and colleagues wrote. Therefore, their model is integrative, and they hope that their article “serves as a springboard for cross-sectional, longitudinal, and experimental work to render chemistry more tangible.”

They added that future research is needed to explore the temporal dynamics of chemistry’s emergence, growth, and maintenance; the conditions for its occurrence; and individual and situational factors that influence it.

Feedback on this article? Email apsobserver@psychologicalscience.org or comment below.

Reference: Reis, H. T., Regan, A., & Lyubomirsky, S. (2021). Interpersonal chemistry: What is it, how does it emerge, and how does it operate? *Perspectives on Psychological Science*. Advance online publication. <https://doi.org/10.1177/1745691621994241>