Teaching Current Directions in Psychological Science

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Aimed at integrating cutting-edge psychological science into the classroom, Teaching Current Directions in Psychological Science offers advice and how-to guidance about teaching a particular area of research or topic in psychological science that has been the focus of an article in the APS journal Current Directions in Psychological Science. Current Directions *is a peer-reviewed bimonthly journal featuring reviews by leading experts covering all of scientific psychology and its applications and allowing readers to stay apprised of important developments across subfields beyond their areas of expertise. Its articles are written to be accessible to nonexperts, making them ideally suited for use in the classroom.*

Visit the column for supplementary components, including classroom activities and demonstrations.

Visit David G. Myers and C. Nathan DeWall's blog "Talk Psych." Similar to the APS *Observer* column, the mission of their blog is to provide weekly updates on psychological science.

The Marriage of Relationship Science and Evolutionary Science

By C. Nathan DeWall

Eastwick, P. (2016). The emerging integration of close relationships research and evolutionary psychology. *Current Directions in Psychological Science, 25*, 183–190.

Relationship scientists and evolutionary psychologists want the same thing: to understand why some relationships flourish and others flop. If they share the same mission, why do the two groups squabble so much?

The main reason is that psychology has, until now, lacked an intellectual fire starter — someone with a keen mind who can see how the "edges of two intersecting literatures can generate intellectual sparks that ignite both fields" (Eastwick, 2016, p. 183).

Paul W. Eastwick is the fire starter that psychology needs. He has identified theoretical and methodological similarities that help bridge relationship science and evolutionary psychology. For example, relationship scientists once focused only on whether people perceived their partners as positive or negative. Now, researchers have begun studying how people's perceptions of their partners relate to their partners' adaptive traits (Simpson, Fletcher, & Campbell, 2001). Evolutionary psychologists have studied people's strategies in short-term versus long-term relationships (Buss & Schmitt, 1993).

Relationship scientists now study relationship development — how romantic interest shifts over time within the same relationship (Eastwick, Keneski, Morgan, & McDonald, 2016). Thus, Eastwick marries relationship-science and evolutionary-psychology perspectives by showing how they can inform each other.

Relationship class activities rarely require instructors to goad students into actively participating: Most students come prepared to care about connections. But not everyone agrees on what makes a good relationship — or whether scientists should try to quantify the fluttering feelings, burning passions, and smoldering thoughts that often suffuse romantic relationships. Before you begin, remind students that most people have strong opinions about relationships. Encourage students to express their ideas with kindness and to practice tolerance of views that do not align with their own.

Activity 1

This activity challenges students to reconsider some basic assumptions they may have about romantic relationships. Have students form pairs and let them know that they will discuss a relationship topic. One student will argue why something is good for a romantic relationship (that student's role is "Finding the Good"), whereas the other student will argue why the same thing can harm a romantic relationship (that student's role is "Finding the Harm").

Students will discuss romantic jealousy. For 1 minute, have students think about their attitudes toward and experiences with romantic jealousy. Next, tell the students in the "Finding the Good" role to spend 2 minutes thinking about how jealousy might help a romantic relationship in terms of promoting satisfaction and commitment and preventing a breakup. Ask students in the "Finding the Harm" role to spend the same amount of time thinking about how jealousy might reduce romantic satisfaction and commitment and increase the likelihood of a breakup. Finally, ask students to discuss their views, both positive and negative, about romantic jealousy. How did the exercise change their initial attitudes about romantic jealousy? Did the exercise affect how they think of their own and others' experiences of romantic jealousy? When might jealousy help or harm romantic relationships?

Instructors can close the activity by discussing how evolutionary psychologists have shown that romantic jealousy can cause people to do things to maintain their romantic relationships. This is called "mate guarding" (Shackelford & Buss, 1997). Relationship scientists, in contrast, show how jealous people often have unhappy relationships. Both perspectives are correct. Considering the correctness of each approach will illustrate the complexity of studying romantic relationships.

Activity 2

This activity mimics what it is like to select a mate. It draws on how Eastwick and his colleague April A. Buck (2014) teach the integration of evolutionary psychology and relationship science. Evolutionary psychologists argue that people select mates with traits that helped our evolutionary ancestors survive and reproduce. The more of these traits people have, the higher their mate value.

Relationship scientists agree that some traits increase a person's desirability as a mate and that those traits may have given our evolutionary ancestors an advantage. For example, people tend to like physically attractive people (Eagly, Ashmore, Makhijani, & Longo, 1991), and attractive people tend to pair with other attractive people. The main difference, according to relationship scientists, is that mate value shifts over time. Early in relationships, physical attractiveness matters quite a bit, but once you've been with the same person for a few decades, depending on their emotional support matters more than their being easy on the eyes.

Students begin this exercise by playing the Pairing Game (Ellis & Kelley, 1999). Instructors need to bring at least one shuffled deck of playing cards, depending on the size of the class. Each student receives one playing card. Ask students not to look at their cards. Next, ask students to put the card on their forehead facing outward. Tell students they need to partner with another student who has the most valuable card (Jack = 11, Queen = 12, King = 13, Ace = 14). To make an offer, students simply approach another student and extend a handshake. If the other person accepts the handshake, the two students are partners. If the other person refuses the handshake, the two students must continue searching for partners.

Once every student has a partner, ask them to rate the similarity of their and their partners' card numbers (1 = *not at all similar* to 10 = *extremely similar*). How do these results support the evolutionary-psychology perspective on the importance of mate value when selecting a partner?

In the second part of the activity, ask students to hand in their cards. Shuffle the cards and give each student a new one. Students will play the Pairing Game again, but this time they will split into four groups and use the below point structure (Eastwick & Buck, 2014):

Group 1	Add points for your partner's suit ♥=3 ♠=6 ♦=9 ♣=12
Group 2	Add points for your partner's suit ♥=6 ♠=3 ♦=9 ♣=12
Group 3	Add points for your partner's suit ♥=9 ♠=6 ♦=3 ♣=12
Group 4	Add points for your partner's suit ♥=12 ♠=6 ♦=9 ♣=3

Once all students have acquired partners, ask them to rate the similarity of their and their partner's card numbers (1 = *not at all similar* to 10 = *extremely similar*). Also ask students whether their ratings in the first Pairing Game were more similar than the ratings in the second Pairing Game (1 = *more similar in second Pairing Game* to 10 = *more similar in first Pairing Game*). How can the students explain why the similarity differed across the two Pairing Games? How do these results support the relationship-science perspective that people select similar mates, but that there are often several other factors involved beyond similar it y that affect partner selection? How might they apply the results of these exercises to their own friendships and romantic relationships?

We'll never know the perfect recipe for a successful relationship — and that's a good thing. People are finicky creatures whose wants and desires shift over time. By merging perspectives from relationship science and evolutionary psychology, researchers will have a greater appreciation for what drives us to connect with others — and how to make those connections last.

Simulating Cultural Evolution

By David G. Myers

Caldwell, C. A., Atkinson, M., & Renner, E. (2016). Experimental approaches to studying cumulative cultural evolution. *Current Directions in Psychological Science, 25*, 191–195.

Imagine yourself as Rip Van Winkle, falling asleep in the year of Chaucer's death (1400) and awakening today, 20 generations later. You and those around you would, in many ways, be leaves of one tree. Thanks to your similar brains, you would similarly experience the world, sense thirst, prefer sweet to sour, learn and remember, require sleep, read smiles, and need to belong.

But how you would differ. You would have great difficulty understanding your neighbors' language, and your mind would be boggled by their motorized transportation, climate-controlled housing, year-round fruits and veggies, smartphones, Internet dating, online shopping, and Post-it notes.

Across time and place, we humans are all kin beneath the skin. Yet with remarkable speed, our cultures evolve and diverge. As APS William James Fellow Roy F. Baumeister (2005, p. 29) explained in *The Cultural Animal: Human Nature, Meaning, and Social Life*, "Evolution made us for culture."

Animals display the basics of cultural evolution. Chimpanzees have developed and transmitted local customs of tool use, grooming, and courtship — one group breaking nuts with a stone hammer, another with a wood hammer. In the laboratory, if Chimpanzee B observes and learns Chimpanzee A's solution for obtaining food, that technique will then be picked up by Chimpanzee C observing B, and so on (Horner, Whiten, Flynn, & de Waal, 2006). Nonetheless, chimp life today — even in chimp cultures with new and improved feeding techniques — is pretty much what chimp life was in Chaucer's time. Earth is not the Planet of the Apes.

Humans, by contrast, exhibit "cumulative cultural evolution," note Christine A. Caldwell, Mark Atkinson, and Elizabeth Renner (2016). Thanks to a "ratchet effect," useful innovations get preserved and built upon across successive generations with little backward slippage. The wheel becomes the spoked wheel, which leads to the pulley. Humans uniquely harness this power of culture, which gives us rich language, money for commerce, indoor plumbing, antibiotics, air travel, and Google. Culture — the shared behaviors, ideas, and traditions that humans transmit across generations — is what's special about our species.

Bottling Cumulative Cultural Evolution in the Laboratory — and the Classroom

Much as a wind tunnel creates a small-world environment for exploring real-world aerodynamics, so Caldwell and her colleagues have created laboratory-based cumulative microcultures. Individuals engage in novel tasks and are observed by other individuals who, in turn, are observed by others. The task might involve making a paper airplane and then measuring its flight distance, or constructing a tower out of raw spaghetti and a small amount of modeling clay. The result is typically the ratchet effect, with later generations of learners tending to outperform their microsociety ancestors. To take the two examples above:

Making planes: To replicate a cumulative culture experiment, instructors could (if an at-least-10-meter-long room is available) ask students to take turns making a paper airplane, with their goal being to maximize flight distance (as measured with tape on the floor). Create groups of six or more students, randomly assigning each group member to a position in the maker–observer chain. The first and second student in each chain become, respectively, maker and observer. The plane maker receives a single sheet of standard paper and is seated at a work station and given up to 5 minutes to fold a plane while the observer watches. When finished, the makers are given three flight tests and then write on their plane its longest traveled distance along with their number in the chain. Next, the observer becomes the plane maker, while the third group member becomes the observer. Each successive observer thus can see the prior planes and distances and observe the new one being created and flown, the question being: Averaging across groups, is there some tendency (as in the Caldwell et al. experiments) for later planes to have longer flights?

Building towers: Given a smaller room, instructors could invite students similarly to take turns making and observing a tower built from a standard (e.g., 500 gram) packet of spaghetti and 200 grams of modeling clay. The challenge is to build the tower as tall as possible, given a time limit (e.g., 5 minutes or less). To simplify the task, a small group could take turns at the tower building as the other group members observe, then take a turn as a group themselves. The question: Are the towers built later taller than the towers built first? The task is harder than it sounds (requiring thicker-than-expected spaghetti bunches at the base), which enables observers to learn from the trials and errors of those before them.

To conclude the discussion of cultural evolution, students also might be invited to write about and then discuss their answers to two macro questions: To what extent does cultural evolution over time lead to a better world? For example, in what ways is the world today a better or worse place than it was 100 years ago?

Students will surely offer examples of both “the good old days” before nuclear weapons, climate change, terrorist bombs, and Internet-fed polarization — the days when small-town and rural communal life was marked by social trust and mutual support, when AIDS was unknown and obesity rare, and when people needn’t lock their doors. Even so, how many would rather live in that time — when labor was often harder, travel was slow, information was sparse, comforts were fewer, and life was shorter? Cultural evolution also can amplify social differences. But on balance, concludes Baumeister, culture makes “life progressively better for ourselves, our children, and those who come after” (p. 392). Indeed, as Caldwell and her coworkers illustrate, culture can ratchet us forward over time.

Do your students agree?

APS William James Fellow Steven A. Pinker (2016) does. In the book *Scientists Making a Difference: One Hundred Eminent Behavioral and Brain Scientists Talk About Their Most Important Contributions*, edited by APS James McKeen Cattell Fellow and APS William James Fellow Robert J. Sternberg, Past APS President Susan T. Fiske, and APS Fellow Donald J. Foss, Pinker concludes that “the historical decline of violence is just one part of a quantifiable improvement in the human condition. At the same time that our lives are becoming more peaceful, they are also becoming longer, healthier, richer, and smarter. In an age of dire predictions and gruesome headlines, it is the greatest story seldom told.”

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