Romance, Schmomance: Natural Selection Continues Even After Sex

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Some breaking news, just in time for Valentine's Day: Researchers have identified something called "sperm competition" that they think has evolved to ensure a genetic future. In sexual reproduction, natural selection is generally thought of as something that happens prior to – and in fact leads to — the Big Event. This thinking holds, for example, that we are drawn to physical features that tell us our partner is healthy and will give us a fighting chance to carry on our genetic lineage. But a new article in the February issue of *Current Directions in Psychological Science* suggests that the human male has evolved mechanisms to pass on his genes during post-copulation as well, a phenomenon dubbed "sperm competition."

In their article, Todd Shackelford and Aaron Goetz at Florida Atlantic University describe this as "the inevitable consequence of males competing for fertilizations."

How much more romantic can you get?

For a monogamous species, sperm competition may seem beside the point. But according to the authors, extra curricular copulations (i.e. affairs) appear to be a significant part of our ancestral history and could, evolutionarily speaking, spell disaster. A male whose female partner engages in some off-line dalliances unwittingly may be investing his resources – food, protection, credit rating — in a genetically unrelated offspring.

Competition may also affect sperm count, say the authors. The more time men spend away from their partners (time that their partners could have spent with other males), the number of sperm in their ejaculate increases upon their next copulation. In one study, the authors note, artificial phalluses constructed to resemble the structure and function of the human penis actually removed an ejaculate-like substance from an artificial vagina. This could indicate that the penis acts as an anatomical squeegee to remove an interloper's calling card.

But sperm competition is not just biology. According to the authors, many sexual behaviors such as deep copulatory thrusting may function to remove rival sperm. Sexual partners report that men thrust more deeply and quickly into the vagina following allegations of infidelity. The same periods of separation that increase sperm number in male ejaculates may also help to explain the increasingly lustful feelings human males develop after long periods of time apart from their mate. That is, the human male may want to copulate as soon as possible as insurance against possible extra-pair copulation.

These latest findings lead us to wonder about what other undiscovered ways humans have evolved in a world dictated by "survival of the fittest." In fact, the authors compare sexual adaptation to a Cold War phenomenon: "Sexual conflict between males and females," Shackelford and Goetz describe, "produces a coevolutionary arms race between the sexes," in which an advantage gained by one gender

leads to counteradaptations in the other. They speculate that research may move beyond male adaptations to, for example, see if females have developed biological or behavioral mechanisms to increase retention of sperm from men with the most favorable genes. But that's for another Valentine's Day.