



Communication, Biology, and Physiology: An Introduction to the Special Issue

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INTRODUCTION

Communication, Biology, and Physiology: An Introduction to the Special Issue

Tamara D. Afifi & Kory Floyd

As perhaps the most social of all the social primates, humans have an undeniable stake in regulating their communicative behavior, from the intrapersonal level to the global level. Communication is ubiquitous within the human species, but it is not enacted in a physical vacuum, any more than in a cultural, historical, or political vacuum. Just as social behavior shapes—and is shaped by—the cultural, historical, economic, political, and religious contexts in which it occurs, it also covaries with the anatomical features and physiological processes of those who engage in it. Indeed, it is logically impossible to separate communication from the biology of those who produce it.

Interest in the connections between communication behavior and physiological processes has burgeoned in the last decade, as evidenced by an increasing number of pre-conferences, conference panels, articles, handbook chapters, and books devoted to the topic. In this year alone, *Communication Monographs* is joined by *Communication Methods and Measures* and *Journal of Media Psychology* in offering a special issue dedicated to the cutting-edge research connecting communication to biological and physiological processes and outcomes.

This special issue, guest edited by Dr Tamara Afifi from the University of Iowa, represents a cross section of the excellent empirical work currently being conducted on communication and physiology. The manuscripts in this special issue represent a wide array of research areas (media, interpersonal relationships, language and social interaction) across the field of communication. The topics explored are also diverse in nature, including anti-drug public service announcements (PSAs), language production, violence in video games, social support, attachments and self-disclosure, humor and sex in advertising, and food advertising. In addition to appealing to a

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broad audience, the manuscripts in this special issue also employ a variety of biological and physiological methods and outcomes, such as neuroimaging, genotyping, electromyography, skin conductance, heart rate, blood pressure, and hormones. They offer readers a glimpse into some of the most sophisticated research adopting a biological and physiological approach in the discipline.

The manuscripts are innovative in their methods and their arguments. For instance, Weber et al. use functional magnetic resonance imaging (fMRI) to examine the connection between brain imaging and counterarguing in response to anti-cannabis PSAs. They contend that high drug-risk individuals process these PSAs differently compared to low drug-risk individuals and that using a “brain-as-predictor” approach allows researchers to predict with greater accuracy how high drug-risk individuals respond to anti-cannabis persuasive messages. These authors not only provide their own data to support their argument, but they then compare their results to four other existing national data-sets. O’Donnell et al. also use fMRI in a unique way by combining it with linguistic analysis to determine what areas of the brain are activated when people process and create social messages. Integrating the content-analytic language processing program LIWC (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007) with neuroimaging, they are able to track brain activity during initial idea exposure and then determine how this predicts communication. Finally, Grizzard use physiological indicators to show evidence for habituation and generalization with violent video games. As these authors point out, very few researchers have quantified habituation and generalization over time and with physiological data.

Grizzard et al. show that repeated play of violent video games produces habituation in physiological (measured by blood pressure and heart rate) and self-report measures, with generalization being even more pronounced with physiological data. All of the aforementioned studies use physiological data to provide compelling evidence for long-standing debates about pressing contemporary issues.

The two articles that focus on interpersonal communication adopt a different approach by incorporating hormones and genotyping. Once again, innovation in the arguments and methods surface in this work. For example, the social support literature has had a history of predominantly examining the type of emotional support people receive or provide. But, some of this research has produced contradictory results, primarily because the type of support people receive may not be what they need or want. Priem and Solmon examine the extent to whether people’s needs for emotional support are met and whether this has a greater reduction in their stress hormone cortisol, compared to the actual support provided. They found that stress recovery after a stress-inducing interaction was greater for people who wanted more emotional support and for those who thought the support during the interaction as more (rather than less) adequate. The Denes paper is novel because it uses genotyping to explore whether people who have certain genetic characteristics communicate differently than others. Specifically, the author wanted to know if allelic variation in the oxytocin receptor gene (OXTR), combined with one’s attachment security, predicts decisions to disclose to romantic partners. She

found that insecurely attached individuals perceived greater risks to disclosing and perceived less psychological closeness based upon their genotype compared to more securely attached individuals. The Denes manuscript is a good example of the integration of one's biology with individual characteristics and one's social environment.

The last two manuscripts provide a unique biological perspective to advertising. Both sets of authors use an evolutionary perspective, which suggests that people have primary biologically driven needs, such as food, safety, threats, and sex, that subconsciously activate aversive and appetitive systems that influence how people process information, make decisions, and communicate emotions and behaviors. Sparks and Lang investigate how sex and humor in advertising influences people's physiological stress responses (i.e., ear/skin and eye muscle movements, heart rate) and how these physiological responses enhance attention and memory of the advertisements. Bailey argues that food is a primary biological motivation that influences autonomic physiological responses (i.e., ear/skin and eye muscle movements, skin conductance) and decisions about food products. She found that how food is packaged elicits certain physiological responses and attitudes about food. Both of these articles use biologically driven arguments and methods to advance the research on advertising and media effects.

Not only are all of the manuscripts in this special issue methodologically state-of-the-art, but they use biology and physiology to advance communication theory in ways that might not have been possible before. When many of us began doing our own empirical work on communication and physiology, this approach was so novel that presenting and publishing our research was often unduly challenging. We believe this special issue—along with the other special issues, books, and convention sessions devoted to the topic—represents a turn of the tide that will encourage both current and upcoming generations of communication scholars to consider the biological and physiological implications of their own communication interests.

Reference

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