Groupthink in Science

David M. Allen and James W. Howell, Editors

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Reviewed by:
Gary J. Williams, OD, FCOVD

We tend to associate groupthink with crowds, cults, and political parties, but groupthink is one of evolution’s contributions to the thinking and behavior of each of us. It is one way that we learn, it provides us with heuristics, and it facilitates getting along in groups which is essential. Almost everything that we have learned we have learned from others. Groupthink is part of thinking 1 as described by Daniel Kahneman in Thinking Fast and Slow. Because it is primarily subconscious and is processed faster than thinking 2, it is difficult to observe its influence on us. It is much easier to recognize its influence on others. As Jerome Groopman explained in How Doctors Think, there must be a body of accepted knowledge to have a workable system, but we also need to know when to question conventional knowledge. Hoofprints in Central Park may not be horses.

The scientific method was developed as a defense against groupthink and other cognitive biases. It can reduce, but it cannot eliminate these problems in science or in medicine. The goal of the editors and authors of this volume is to increase the readers’ awareness and sensitivity to groupthink, explain why it exists, and to encourage the discontinuation of pressures which encourage the compromise of ethical principles. Historical examples are provided by the authors.

Science is under attack by those who disagree with its conclusions. It needs to be able to be defended with confidence as Sarah Rose Cavanagh explains in Hivemind. One of the most frightening examples of groupthink comes from a different sphere of decision making where we also hope that its influence is neutralized. Robert M. Gates, who was part of making national defense decisions in eight Presidential administrations, wrote the following in his book Exercise of Power.

Too often I have seen groupthink in the Situation Room; too often I have seen those who raise tough, awkward questions derided or silenced by stern, disapproving looks from the fire-breathers; too often I have seen the fear of the consequences of not acting drive action; too often I have seen outrage rather than careful consideration predominate making decisions.

Chapters at the beginning of this volume explain groupthink, the chemical and neurological processes which have evolved in our brains to facilitate it, and the conditions which trigger it. There are also a number of chapters which provide examples of groupthink which led to erroneous decisions, although I think that the authors have been generous in categorizing some of these groupthink.

There are two chapters which are of immediate interest and application to us as clinicians. Chapter 17, “The Tyranny of the Normal Curve: How the ‘Bell Curve’ Corrupts Educational Research and Practice” is even
more adamant than “The End of Average” by Todd Rose of the dangers of judging people and performance by statistical means. Its author, Curt Dudley-Marling, is Professor Emeritus in the Lynch School of Education at Boston College. As he explains, “the common practice of using data from norm-based research to make claims about individual students is an instance of the ecological fallacy that admonishes us against making inferences about specific individuals based on aggregate data collected from the group to which those individuals belong. The normal curve – as applied to the behavior, traits, and abilities of humans – is a myth, an example of scientific groupthink.” There are other caveats that Professor Dudley-Marling offers about groupthink, such as: “It conflates human differences with deviances”, and “It is normal to be different.” And yet groupthink about norms is so endemic that it is assumed “that objective, well-designed achievement and ability tests necessarily produce normal distributions that are presumed to be representative of human behavior.”

The children who are referred to our offices are not “normal”. If their performance was average (or better than average) they may have benefitted from our care but would not have been referred. The conclusion of this chapter is that it is normal to be different. In Dudley-Marling’s words: “Recognizing the variability that exists in any group of students also highlights the importance of encouraging teachers to draw on their professional knowledge and experience in support of student learning. It is worth noting that the conceit that there are best, research-based practices that should dictate praxis is not limited to education. The implementation of the best practice service model in medicine and counseling, for example, is wide-spread with the effect that the professional judgment of physician and counselors is increasingly devalued.”

Education in the U.S. places high value on testing and technology. More value should be placed on the teachers who work with the students and their ability to individualize instruction based on a child’s needs. This also pertains to the other professionals involved such as speech therapists, occupational therapists, physical therapists, and optometrists and vision therapists when the child has visual problems. Many people look back and point out the person; teacher, coach, scout leader, or other who made a big difference in their lives. Technology is important. It augments what we can do, but it doesn’t replace personal contact.

This brings us to Chapter 8, “The Role of Communicating the Beliefs of the Clinician – Using the Placebo Effect in Clinical Practice” by Dr. Paul Harris, a Professor at the Southern College of Optometry. This chapter is thoroughly researched with extensive excerpts from the literature. Dr. Harris presented on the placebo effect at the annual COVD meeting about a decade ago. Everyone who aspires to maximize the benefits that they provide to their patients should be aware of the power of the placebo effect. As Dr. Harris remarks “The placebo effect is a natural outcome of a normal therapeutic relationship between all healthcare providers and their patients which cannot be eliminated or controlled, and all healthcare providers should be learning to harness it to effect positive outcomes.”

Dr. Nancy Torgerson, a colleague who has presented on team building at the annual COVD meeting, would add that this applies to your entire staff.

Dr. Harris presents the transformation in medicine over time from narrative medicine and a physical examination to increased reliance on tests. It reduces the doctor time with the patient and is believed to be a more objective method for determining the diagnosis and treatment. The history is taken by a data collector reducing the opportunities for the caregiver to observe the patient, ask questions based on how the information is expressed, and to get to know the patient as the patient also gets to know them. This sterilized relationship fits a business model
in which the players are interchangeable due to the reliance on mechanized testing and the data in the electronic medical records. Groupthink deceives providers and their educators into believing that this increased efficiency will also be more effective and more professional and will eliminate the placebo effect. But as Dr. Harris points out, “every prescription given by every caregiver contains, as integrated element, a symbol, a potential to trigger a placebo response by the recipient. Taking this to be true, then two things emerge: (1) one can never fully separate out the effect of a specific treatment from the placebo effect and (2) the goal of knowing absolutely what a treatment effect is devoid of the placebo effect is unattainable.”

Dr. Harris does such a fine job of exploring his topic that, rather than further paraphrasing his content, I’ll share a series of key quotes from his chapter. “To be more scientific means that one must disparage placebos and their use, and this is driven by self-image and the projection of that image to others. It is unclean to suggest that any aspect of modern scientific care might involve something intangible and unquantifiable, such as placebos and their effects.”

“Even though on an official basis the medical community disdains the use of placebos and is trying to get it out of the way so they can praise the efficacy of the therapeutic agents they use, placebos are front and center.” Physicians know that many more patients will get better if a therapeutic agents is prescribed even though it has no direct effect on the patient’s condition. “Based on responses to a questionnaire sent to members of the American Academy of Family Physicians, 56% said that they had used a placebo in clinical practice, 61% said that they used a placebo rather than offering no treatment at all, and only 8% questioned the ethics of using placebos.”

“Placebo factors have neurobiological underpinnings and actual effects on the brain and body.” “In a study which compared the effectiveness of a placebo versus anesthetic effects during dental procedures, the major factor turned out to be the suggestion of effectiveness by the caregiver at the time of the shot … Those who got the placebo with the verbal assurance got more relief from pain than those getting the actual anesthetic with no reassurance at all.”

“For human beings, words can function as stimuli, so real and effective that they can mobilize us just like a concrete stimulus…. What counts is the reality present in the brain, not the pharmacological one. The nervous system expectation in relation to the effects of a drug can annul, revert, or enlarge the pharmacological reactions to this drug.”

“The physician who can marshal a placebo response with her words and manner probably comes closest to what many of us would think of as the profession’s ideal – the kind of doctor who seems wholly committed to our welfare, not the insurance company’s; who knows when and how to give us hope, who listens closely but doesn’t feel constrained from delivering advice; who knows because she has taken the time to know us.”

Dr. Harris concludes the chapter by stating that “clinical guidelines for improving effectiveness, not just in healthcare, but most likely in any interaction between people.” Don’t we hope that our patients feel better from all of the interactions that they have with our office and that their experience also buoys all of our staff?

AUTHOR BIOGRAPHY:
Gary J. Williams, OD, FCOVD
Owego, New York
Gary J. Williams, OD, FCOVD, is the owner of Williams Family Eye Care, P.C. He is a Past President of COVD, and was the organization’s chairperson of education for 18 years. Dr. Williams has been an officer in the New York State Optometric Association, and served as chairperson of the Pediatric and Binocular Vision Committee of the American Optometric Association. Dr. Williams has also served on the National Board of Examiners in Optometry for 14 years, contributing to national licensing examinations.
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