



Revising for Publication: Introducing your Research

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Workshop Overview

This packet will introduce methods for revising graduate work for academic publication by focusing on the beginning of any manuscript—the Introduction. It will present components for crafting a strong Introduction as well as provide different methods for achieving this goal.

Workshop Goals

- Understanding the role of introductions within the review process
- Identifying the components of an introduction
- Strengthening the appeal of your introduction

Approaching the introduction

Determine the “news value” of your research. By publishing your work, you are entering into the scholarly conversations of your field. So remember, it’s not just about you and your research but about the field and why your research should matter to them. Your introduction is the first chance you get to convince editors and reviewers that the field needs this paper. Show them that it is a must-read. Make an irresistible case by finding an opening and filling it.

Before you revise your paper for publication

Do a rhetorical analysis of your target journal that is both textual and contextual. Journals usually either publish front-running articles within the discipline, attempt to cover the marginalized in addition to the mainstream, or accomplish a mix between the two. Where does your journal fall? How are they attempting to be progressive? And, what is the price of membership?

5 Parts of an Introduction

1. Create interest
2. Establish a problem
3. Argue the main point
4. Explain the methodology
5. Define key terms

5 Opening Strategies to Create Interest

1. Provide an arresting anecdote
2. Describe the item under scrutiny
3. Resolve a scholarly debate
4. Fill a gap
5. Connect to real-world issues

Be willing to revise your introduction and show it to your peers and advisors. As you write and revise, you will continue to develop and discover your “news value.”

A Note About this Packet

Please note that this packet and workshop is intended to provide a discussion of general skills that should transfer across disciplines, but you may not find the information in this packet or the workshop as directly applicable to your field or your current study. The workshop and packet are not substitutes for becoming literate in your field’s genre practices and asking questions of peers and advisors.

EXAMPLE 1

The more it changes, the more it becomes the same: The development of the routine of shape identification in dynamic geometry environment

in *International Journal of Educational Research*

By Nathalie Sinclair and Joan Moss

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1. Introduction

In a recent class given for teachers pursuing Masters degrees in mathematics education, the topic of discussion turned to the enormous difficulty students had in identifying a square as a rectangle. While acknowledging the difficulty (which has been reported extensively in the literature; see, for example, Clements & Battista, 1992), the teachers expressed a sense of confidence that it could be easily overcome with a few effective strategies; one teacher explained how she has started describing the square as a special kind of rectangle. The next day, I (Nathalie) invited the teachers to watch a geometry animation¹ starring circles. In one segment of the film, a circle gets bigger and bigger (with the top arc of the circle always remaining visible near the center of the screen) until it finally flips convexity and starts getting smaller and smaller before collapsing to a point (see Fig. 1). Some noticed and remarked that the circle had effectively become a line at some point in this transformation. When I offered the observation that “a line is a circle,” it was met with great resistance and even laughter. When I adopted their strategy professed the day before, of calling the line a special kind of circle, I was met with silence, first, and then avid disagreement. The difficulty was not so easily overcome.

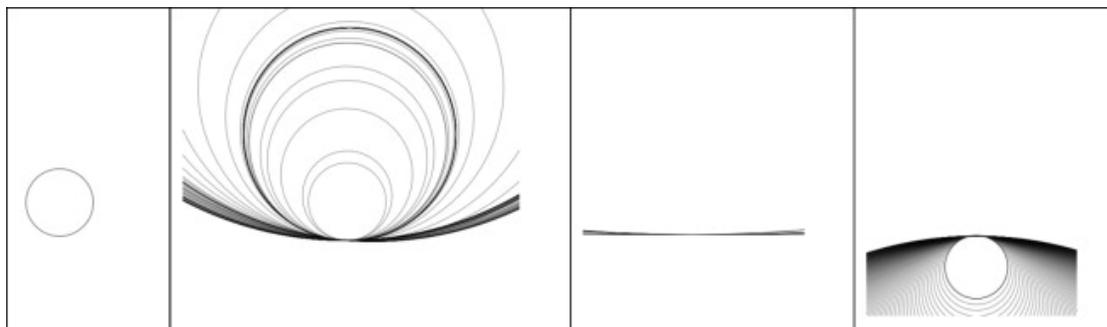


Fig. 1. A circle getting increasingly big as its center moves (invisibly) up, until it is infinitely far away, and then starts getting smaller.

This anecdote emphasizes, for us, the extent to which it is difficult for learners (of all ages) to engage in the type of ‘saming’ discourse that is so central to mathematics² (Sfard, 2008), that is, to be willing to give one name to a number of things that have hitherto not been considered as being ‘the same.’³ As their students, who have developed a robust sense of the distinction between a square and a rectangle, so did these teachers held on to a rigid distinction between a circle and a line.⁴ Perhaps the visual imagery associated with these shapes made it difficult to see them as the same. Or, perhaps their definitions of these two shapes did not enable them to see one as the other. Whatever the reason, the teachers’ experience shares commonalities with that of young children asked to identify a long skinny three-sided shape as a triangle. In the eyes of the young learners who have already developed a strong prototypical image of a triangle (more or less equilateral, with a horizontal base), the long skinny three-sided oblique shape is no more a triangle than a snake is a dog. In this paper, we try to answer the question of whether dynamic geometry environments (DGEs) may help in transforming children's processes of

saming or, more specifically, the young learners' routines of identification of geometric shapes. To this end, we visit a kindergarten classroom in which Sketchpad was used to explore the concept of a triangle.

2. Theoretical background

In this next section, we provide an overview of research on children's discourse on triangles and, in particular, the purported difficulty many of them have in identifying non-prototypical three-sided shapes as triangles. We then describe our analytic framework, which draws on a communicative approach. Finally, we explain why we have chosen to use DGE with such young children when the software is more often used with high school students. Our rationale is based on research that suggests that the capacity to easily generate a continuous transformation of a geometric shape can help learners attend to the underlying properties of this shape, that is, to the aspects of the shape that might be seen as remaining 'the same' when the shape undergoes distortions.

2.1. Students' geometric thinking in the view of existing research

What's a 'triangle'? One way to answer this question would be to provide a mathematical definition. Anything that satisfies the definition would count as a triangle—and each member of the category has the same status as any other. But linguists have proposed that humans do not typically use definitions to form categories. Prototype theory (Rosch, 1973) suggests that a category like 'triangle' consists of different elements that have unequal status—i.e. an equilateral triangle might be more prototypical than a long skinny triangle. A prototypical triangle, according to Rosch, is the most central member of the category 'triangle' and is often the first stimulus associated with the category. Other members of the category will have a "family resemblance" (Wittgenstein, 2001) to the prototypical one. Many mathematics education researchers have shown that children are successful at identifying equilateral triangles but encounter difficulties when asked to identify triangles that vary too much from this prototypical shape (triangles that differ in orientation, symmetry and skewness). Not only are these triangles non-typical, they are not seen as having a family resemblance to it. For example, Hannibal and Clements (2000) examined the processes young children (3–6 years of age) used to decide on whether given shapes are triangles and found a high rate of rejection of non-prototypical triangles. Hershkowitz (1989) shows that young children use prototypes and imposed attributes—such as orientation of the shape on the page—either to accept or reject the categorization of a given geometric figure into a named class of shapes. For example, some children failed to identify a tilted equilateral triangle as a triangle. A quick survey of educational materials aimed at young children (textbooks, picture books, posters, etc.) provides ample evidence for the prototypical nature of the equilateral triangle. Clements and Battista (1992) claim that the difficulty of correctly identifying non-prototypical shapes persists even for middle school students.

Research also indicates that children prefer to rely on a visual prototype rather than a verbal definition when classifying and identifying shapes (Gal and Linchevski, 2010 and Van Hiele, 1986). Specifically, when a child holds both a verbal definition and a visual prototype for a given geometric concept, the child often calls upon the visual prototype rather than, or in spite of, the verbal definition when assigning class membership. For example, Fischbein and Nachlieli (1998) note that although students could give the correct definition of a parallelogram, many relied on the visual prototype instead of applying their definition when identifying shapes.

Similarly, Archavsky and Goldenberg (2005) find that the interaction between formal definitions and mental images of geometrical figures are often in conflict. This suggests that students are not necessarily using those “correct” of “formal: definitions” as mathematical definitions, but as descriptions of the elements in their category of, say, ‘parallelogram.’

A study by Lehrer, Jenkins, and Osana (1998) involved children aged 6, 7, and 8, who were asked to look at triads of polygons and determine which two were the most alike. The researchers found that most children rationalized pairing based on visual appearance. However, they also found that many children made successful pairings using descriptions based on morphing, that is, “mentally animating the action of pulling or pushing on a vertex or side of a two-dimensional form,” (p. 145). Unfortunately, as the authors lament, these types of descriptions are not often endorsed or developed in school mathematics, particularly in static environments.

The goal of the present study was to investigate whether DGE could help address the two following issues arising in previous research: (1) to support and develop the morphing strategies evidenced in Lehrer's et al.'s study in order to create family resemblances to the prototypical triangle, and (2) to help children manage the duality between visual and verbal discourses. In the rest of this section, after introducing a vocabulary for dealing with the subject, we describe those aspects of DGE that gave rise to this expectation.

EXAMPLE 2

Synecdochic Memory at the United States Holocaust Memorial Museum
in *College English*

By Michael Bernard-Donals

<http://www.jstor.org/stable/23212923>

(USHMM), in Washington, D.C., inside a glass case, lie thousands of shoes. Old and mismatched, moldering after sixty years, they are what remains of countless Jews who were told to disrobe and who were subsequently murdered at Majdanek, Poland, during the final years of the Holocaust. Of the objects collected for display by the designers of USHMM, they are among the most powerful icons of the destruction commemorated at the museum, and they were chosen specifically to provide museum visitors the opportunity to identify with those who were destroyed, and to learn something about the events of the Holocaust, events that for most visitors, occurred before they were born. In figural terms, the shoes are meant to stand in for those events, to serve as a sign for what happened, and to evoke in museumgoers' imaginations the enormity of the destruction. The shoes function as metonyms, parts standing in for the whole, and as such are intended by the designers of USHMM as a way to make present an object of history that is otherwise inaccessible to visitors. In the early 1980s, Michael Berenbaum—who at the time was the director of the still unbuilt museum—wrote in the “Red Book,” the document that would guide museum planning until later that decade,

The vast majority of visitors to the museum, even in the museum's first years and all the more so with the passage of time, will enter the Hall of Witnesses with little or no direct experience with the events and era of the Holocaust. Thus the emphasis here must be to introduce essentially new and unfamiliar ideas and values with authenticity. [...] (13)

The shoes, as metonyms of the Holocaust, were meant to be vehicles of that authenticity.

But visitors to the museum, in the years since its creation, attest that the shoes often have a very different effect. A visitor named Martha writes in the loose-leaf binder at the conclusion

of the permanent exhibition that, in this section of the museum, "I was overcome with nausea" (Comments, July 1, 2005); a visitor from England writes that "it was quite hard to take all of it in" (Comments, Aug. 25, 2003); Craig writes of the shoes, "small, big, wide, skinny; piles upon piles of just shoes [...] They all look the same, but I know in my heart, they are different" (Comments, Apr. 29, 2004). And an unnamed visitor wrote a single line: "Some of the shoes were so small" (Comments, May 23, 2003). These museumgoers didn't so much see, in the display of shoes, the events of the Holocaust, or more accurately, they did not only see the Holocaust. I would argue that for these visitors (and many others, judging from the thousands of comments left between 2001 and 2008 that I have read) the shoes also stood in the way of their ability to connect them to the events, and that in important ways the shoes defer that connection. They dislocate the visitor from the historical past ("They all look the same [. . .] they are different") and—in that dislocation—they trouble the visitor's sense of relation to that past. Rather than function simply as a metonymic, part-to-whole relation, the shoes and other objects in USHMM that I'll describe in this essay function more as synecdoches, establishing a part-to-part relation that ultimately defers their connection to the historical past, and that potentially undermines the historical authenticity that museumgoers seem to seek, and which the USHMM designers wished to inculcate.

In an essay written not long after the museum's opening, Philip Gourevitch makes clear that it is just this apparent disconnection to the historical past that so concerned him about the museum:

Peep-show format. Snuff films. Naked women led to execution. People are being shot. Into the ditch shot, spasms, collapse, dirt thrown in over. Crowds of naked people. Naked people standing about to be killed, naked people lying down dead. (57)

How in the world, he wonders, could any of this contain a moral lesson, other than to show the barbarity of humans to one another? What so bothered Gourevitch in his essay "Behold Now Behemoth: The Holocaust Memorial Museum—One More American Theme Park" was the way the museum's collection of images and artifacts seemed to evoke not so much historical understanding as a kind of disarticulation of memory and history, one that seemed to take visitors apart. And it troubled the designers of USHMM as well. How, in a museum whose mission is principally education, could it confront visitors with objects and images that indicated the events sixty years in the past without risking that visitors would come away with an inauthentic understanding—that is to say, a sense of events that was disconnected. This from the historical lessons the museum's designers hoped they would draw from the permanent exhibition—of the Holocaust?

What I'll argue in this essay is that although the designers of USHMM relied—as do designers of museums more generally—on a metonymic sense of history, in which objects, images, and artifacts (the detritus of history) stand in for and represent the object of history, some of the material contained in USHMM functions, potentially at least, as synecdoche. Like the shoes (to which I'll return), what was meant to establish an authentic historical relation to the past—the shoes were intended to "poignantly tell a small single story as a metaphor for a larger event" (Weinberg memo 3)—instead overwhelmed that sense of history, presenting visitors not so much with the historical whole, but with a hole, an absence, where historical understanding might have resided. An analysis of papers that reflect the decision-making process that took place during the museum's planning stages, and of objects and images in the museum's permanent exhibition, shows that although the museum's designers wished to establish an authenticity that relied principally on a metonymic sense of history, in which the objects of the

past can and should be linked more or less firmly to a historical whole (the events that took place in Europe and elsewhere before, during, and after the second World War), the choice and arrangement of artifacts and images function as synecdoches, troubling museum visitors and thus calling into question the extent to which a truly authentic depiction of the Holocaust is possible at all.

EXAMPLE 3

Relevance of the Thorpe length scale in stably stratified turbulence

In *Physics of Fluids*

By Benjamin D. Mater, Simon M. Schaad, and Subhas Karan Venayagamoorthy

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I. INTRODUCTION

A relatively simple and objective measure of large-scale vertical overturns in turbulent oceanic flows is the Thorpe length scale, L_T .¹ Beyond its ability to indicate vertical eddy size from density profiles, however, L_T is of limited use in more fully characterizing turbulence unless some relationship with fundamental quantities of the flow can be determined. In stably stratified turbulence, these fundamental quantities include turbulent kinetic energy, k , dissipation rate of turbulent kinetic energy, ϵ , buoyancy frequency, N , mean shear rate S , and molecular kinematic viscosity, ν . Dougherty² and Ozmidov³ originally suggested the length scale constructed from ϵ and N should indicate the size of the largest eddy unaffected by buoyancy in stratified turbulence — this, of course being the well-known Ozmidov length scale, $L_O = (\epsilon/N^3)^{1/2}$. Subsequent interpretations of this early work popularized L_O as an outer limit on eddy size for a given level of turbulence, as reflected by ϵ , acting against a stably stratified background density profile, reflected in N , and thus should be related to L_T (e.g., see Refs. 1 and 4). In this light, L_O has become the preferred fundamental counterpart to the directly measured L_T and, therefore, often serves as the critical link between a relatively unsophisticated observation and a fundamental aspect of turbulence as embodied in ϵ .

Reliance on a common scaling between L_O and L_T is commonplace in the field of oceanography where direct measurement of ϵ with microstructure profilers is far more difficult than that of density profiles from standard Conductivity, Temperature, Depth (CTD) profilers needed for calculation of N and L_T (see e.g., Refs. 4 and 5). Accurate inferences of ϵ from vertical density profiles, however, inherently require dissipation at small scales to be in phase with the observed large scale motions at the instant of sampling. In other words, the outer scales of the flow must be directly determining the rate of dissipation at the smallest scales. In this study, we use direct numerical simulations (DNS) of decaying stably stratified turbulence and physical reasoning to argue that this commonly held assumption is only valid for the special case when turbulence and buoyancy time scales are approximately equal, i.e., $NT_L \approx 1$, where $T_L = k/\epsilon$ is the turbulence time scale or turbulence decay time. We can refer to this as the critical case since the turbulent Froude number (discussed later) which is simply given by $(NT_L)^{-1}$ is approximately unity. For flows strongly influenced by buoyancy (i.e., $NT_L > 1$), we argue that an overturn size more truly reflects the instantaneous turbulent kinetic energy and show that L_T more generally agrees with a length scale constructed from this quantity, $L_{kN} = (k/N^2)^{1/2}$. In such cases, the outer scales of the flow are larger than the scale of buoyancy control as set by L_O and, instead, are strongly anisotropic and decoupled from ϵ .

In what follows, we provide a brief discussion of the physical interpretations of the

fundamental length scales, describe the generation and sampling of numerical data, and explicitly show the performance of various fundamental length scales in predicting L_T under different levels of stratification. We conclude with a discussion of the theoretical and practical implications of predicting k from measured Thorpe scales and consider our results in the context of other DNS, laboratory, and field studies.

EXAMPLE 4

Nonpharmacological Treatments of Insomnia for Long-Term Painful Conditions: A Systematic Review and Meta-analysis of Patient-Reported Outcomes in Randomized Controlled Trials in *Sleep*

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INTRODUCTION

Poor sleep is a potential cause of ill-health. Self-reported short and long habitual sleep duration, difficulties initiating or maintaining sleep, non-restorative sleep, and the use of hypnotic drugs are significant predictors of obesity, diabetes, widespread pain, stroke, coronary heart disease (CHD), and even mortality.^{1–6} Insomnia also increases the risk of subsequent onset of depression, anxiety disorders and substance misuse in otherwise healthy individuals.^{7–10} These findings, assuming they reflect causality, highlight sleep as a plausible therapeutic target for preventing a range of long-term conditions.

Insomnia is a major problem to many people living with chronic pain that lasts longer than 3–6 months.¹¹ Chronic pain has been ranked the top cause of quality-adjusted life-year loss in primary care, ahead of recognized sources of burden of disease such as depression, anxiety disorders, diabetes, respiratory conditions, high blood pressure and CHD.¹² It is estimated that 50% to 90% of chronic pain patients report insomnia of a severity that warrants clinical attention.^{13–16} In experimental studies, the introduction of sleep disruption can trigger pro-inflammatory responses, reduce endogenous pain inhibitory control, amplify pain experience, lower pain tolerance, and increase somatic symptoms.^{17–20} These findings are in line with the idea of a reciprocal, rather than unidirectional, relationship between sleep and pain.^{21–25} Recently, there has been a surge of interest in applying established nonpharmacological sleep interventions to treat chronic pain patients with comorbid insomnia. At odds with the hypothesized reciprocal relationship, results have been inconsistent. While some studies observed no change in pain post-intervention,^{26–29} others found a significant reduction in pain intensity after sleep improvement.^{30–32} It remains unclear whether better sleep could lead to less pain and better health and well-being.

The current meta-analysis aimed to evaluate the efficacy of nonpharmacological sleep interventions for people with long-term cancer and non-cancer painful conditions. We were interested in the effect of these interventions on sleep and their broader impact on health and well-being as indicated by pain, fatigue, depression, anxiety, physical and psychosocial functioning. We restricted our evaluation to nonpharmacological sleep interventions only, because pharmacological sleep interventions were not recommended for the protracted type of insomnia experienced by patients with chronic pain.³³ Based on the similarities in presentation and underpinning mechanisms between primary and pain-related insomnia,^{34,35} it was hypothesized that nonpharmacological sleep interventions would have a beneficial impact on

sleep. However, the meta-analysis was exploratory with regards to the effect of these interventions on the aforementioned health and well-being outcomes.

EXAMPLE 5

Political diversity will improve social psychological science
in *Behavioral and Brain Sciences*

José L. Duarte, Jarret T. Crawford, Charlotta Stern, Jonathan Haidt, Lee Jussim, and Philip E. Tetlock

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He who knows only his own side of the case, knows little of that.

— John Stuart Mill, *On Liberty* (1859/1989, p. 38)

1. Introduction

In the last few years, social psychology has faced a series of challenges to the validity of its research, including a few high-profile replication failures, a handful of fraud cases, and several articles on questionable research practices and inflated effect sizes (John et al. 2012; Simmons et al. 2011). In response, the Society for Personality and Social Psychology (SPSP) convened a Task Force on Publication and Research Practices which provided a set of statistical, methodological, and practical recommendations intended to both limit integrity failures and broadly increase the robustness and validity of social psychology (Funder et al. 2014, p. 18). In this article, we suggest that one largely overlooked cause of failure is a lack of political diversity. We review evidence suggesting that political diversity and dissent would improve the reliability and validity of social psychological science.

We are not the first to make this point. Tetlock (1994) identified ways in which moral-political values led to unjustified conclusions about nuclear deterrence and prejudice, and Redding (2001) showed how the lack of political diversity across psychology's subfields threatens the validity of the conclusions of psychological science. Unfortunately, these concerns have gone largely unheeded. As we shall show, the reasons for concern are even greater now than when Tetlock and Redding published their critiques.

This article makes five distinct contributions to the scientific literature, each corresponding to a separate section of the paper. Section 2 shows that although psychology once had considerable political diversity, the trend over the last four decades has been toward political homogeneity. Section 3 identifies three risk points where the lack of political diversity can undermine the validity of scientific research claims. Section 4 draws on findings from organizational psychology to show how increasing political diversity can improve social psychological science. Section 5 examines possible sources of political homogeneity in social psychology today, including differences between liberals and non-liberals in ability and interest, hostility toward non-liberal views, and discrimination against non-liberals. In section 6, we offer recommendations for how social psychologists can increase political diversity within their own ranks and reduce the harmful effects of political homogeneity on their research.

Some comments on terminology are needed before we begin. First, we use the term “social psychology” to also include personality psychology because the two fields are closely intertwined and because it is awkward to refer repeatedly to “social and personality psychological science.” We focus on social psychology because it is the subfield of psychology that most directly examines ideologically controversial topics, and is thus most in need of political diversity. Second, we focus on conservatives as an under-represented group because the

data on the prevalence in psychology of different ideological groups is best for the liberal-conservative contrast – and the departure from the proportion of liberals and conservatives in the U.S. population is so dramatic. However, we argue that the field needs more non-liberals however they specifically self-identify (e.g., libertarian, moderate). Third, it is important to recognize that conservatism is not monolithic – indeed, self-identified conservatives may be more diverse in their political beliefs than are liberals (Feldman & Johnston 2014; Klein & Stern 2005; Stenner 2009). Fourth, we note for the curious reader that the collaborators on this article include one liberal, one centrist, two libertarians, one whose politics defy a simple left/right categorization, and one neo-positivist contrarian who favors a don't-ask-don't-tell policy in which scholarship should be judged on its merits. None identifies as conservative or Republican.

A final preparatory comment we must make is that the lack of political diversity is not a threat to the validity of specific studies in many and perhaps most areas of research in social psychology. The lack of diversity causes problems for the scientific process primarily in areas related to the political concerns of the Left – areas such as race, gender, stereotyping, environmentalism, power, and inequality – as well as in areas where conservatives themselves are studied, such as in moral and political psychology. And even in those areas, we are not suggesting that most of the studies are flawed or erroneous. Rather, we argue that the collective efforts of researchers in politically charged areas may fail to converge upon the truth when there are few or no non-liberal researchers to raise questions and frame hypotheses in alternative ways. We do not intend this article to be an attack on social psychology – a field that has a long track record of producing research that is vital to understanding and improving the human condition (see examples in Zimbardo 2004). We are proud to be social psychologists, and we believe that our field can – and will – embrace some relatively simple methods of using diversity to improve itself as a science.