

EXAMPLE

1

The Structural Modification of 6,8-Diprenylaromadendrin, An Approach to Improve the Anti-HIV Properties of this Natural Product

Abstract

The human immunodeficiency virus (HIV), the causative agent for Acquired Immunodeficiency Syndrome (AIDS), has been a target for therapeutic intervention for more than twenty years. Great strides have been made in the treatment of AIDS¹, but drug resistance is still prevalent, warranting further investigation into new therapies.² Moreover, though the pharmaceutical industry once had a keen interest in developing drugs for treating HIV infection, in recent years, their research efforts have been concentrated in areas such as oncology, inflammation, diabetes, neuroscience, cardiovascular disease, and obesity. Unfortunately, for a variety of reasons, major pharmaceutical companies have markedly reduced their commitment to infectious disease research.³ New therapies with novel mechanisms of action are still very much needed to ensure AIDS does not re-establish itself as the scourge it once was.

The immediate, near-term goal of this research is to establish the chemistry required to optimize the known anti-HIV activity of the natural product, 6,8-diprenylaromadendrin (6,8-DAD; see Figure 1 below).⁴ Defining the antiviral mechanism of 6,8-DAD potentially can offer an innovative means for controlling the viral replication of HIV.⁵

This research project, to be initiated in the very near future, will rely upon traditional medicinal chemistry for structure optimization, and the use of external collaborations for evaluating the biological activity of novel compounds.⁶ The short- and long-term goals of this project will be able to answer the following questions⁷:

- a) Can more potent analogs of the original natural product be prepared?
- b) Can we use these new analogs to identify the molecular target of the drug and therefore identify its mechanism of action?

c) If the target of this antiviral agent is novel, is it “druggable”?⁸

Additionally, this project will serve as an excellent pedagogical device for undergraduate science majors⁹ and as the foundation of a broader application for external funding.

On the basis of the conclusions drawn from this research and the extent to which the aforementioned questions are answered, at the very least, one or more publications in well-respected, high-impact journals such as the *Journal of Medicinal Chemistry*, *Bioorganic and Medicinal Chemistry*, and the *Journal of Virology* can be expected.¹⁰ Moreover, and equally important, if tangible evidence of improved biological and drug-like properties are established, patent protection for the new analogs would be sought promptly. Lastly, this project will serve as the basis for external grant proposals to such prestigious institutions as the National Institutes of Health and the National Science Foundation.

Background

Prior to returning to Fordham University in July 2010, I spent the past sixteen years working as a medicinal chemist in the pharmaceutical industry, where I contributed to, and have lead research teams in the areas of inflammation^{11a}, cancer^{11c}, and antiviral^{11b,d} research. I am the coauthor of twenty research papers and a co-inventor of more than twenty patent applications. Previous to this, I spent two years at Memorial Sloan-Kettering Cancer Center, working on the total synthesis of the anticancer agent Taxol,[®] where I honed my skills as a synthetic organic chemist.¹² I obtained my BS from Fordham University (Chemistry, FCRH, '84), my MS and PhD from New York University (Chemistry, 1986, and 1990).

Contribution

As mentioned in the abstract, the 3-hydroxyflavanone, 6,8-diprenylaromadendrin (6,8-DAD; Figure 1) is reported to possess anti-HIV activity.⁴ However, little is known about the viral target of this compound or the structural requirements for its potency. This core is quite common and several related, less-substituted analogs possessing similar biological activity have been disclosed. Potential sites within

the 6,8-DAD framework for structural modification are highlighted in color in Figure 1. This program will prepare structural analogs of this natural product with the intent of defining how these alterations impact potency. The correlation of molecular structure with biological activity is known as a structure-activity relationship (SAR) and is an essential part of any medicinal chemistry program. To harness the power of SARs, an iterative paradigm¹³ will be implemented to allow for the refinement of the subtle molecular properties for potency.^{14,15}

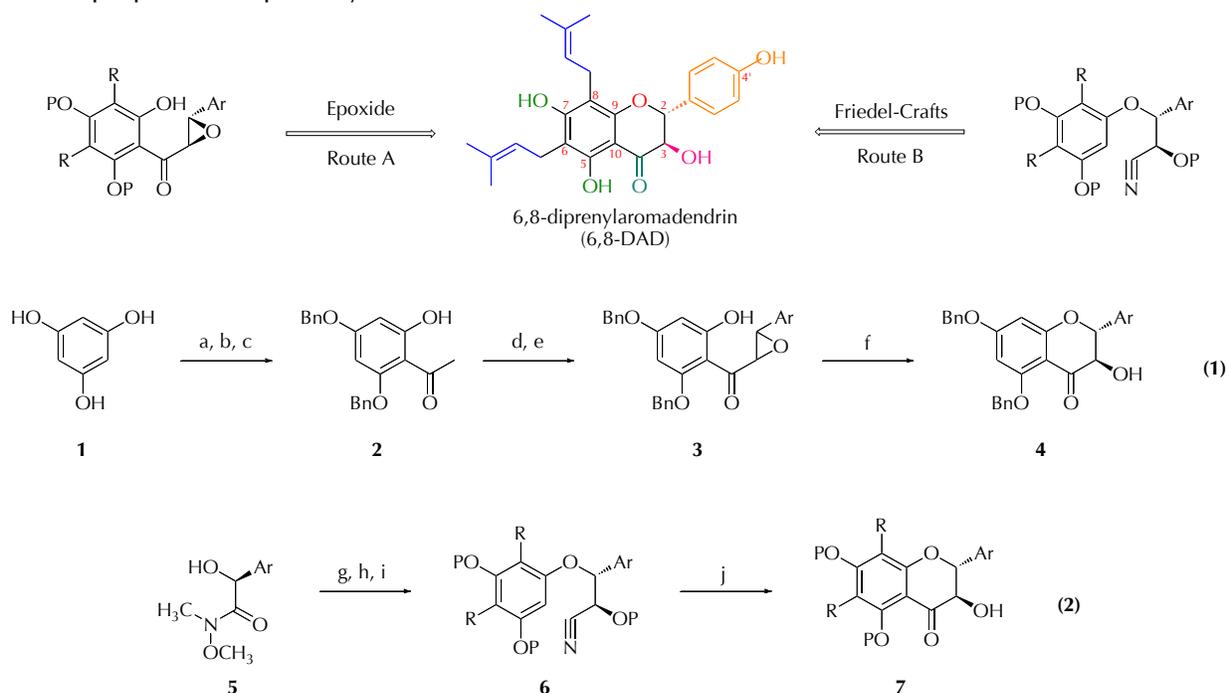


Figure 1: The Structure of 6,8-diprenylaromadendrin and proposed synthetic routes.

Reagents: (a) K_2CO_3 , BnBr; (b) AcOH, $(CF_3CO)_2O$; (c) $TiCl_4$; (d) ArCHO, KOH; (e) DMDO; (f) 0.12 M HCl, aq EtOH; (g) phenol, DEAD, Ph_3P ; (h) $LiAlH_4$; (i) TMSCN; (j) $ZnCl_2$, HCl.

Numerous syntheses of the 3-hydroxyflavanone skeleton have been reported¹⁶ and this program will build on these published results. The use of literature precedent should minimize some of the risk associated with research (ie, the published routes are likely to permit the preparation of analogs without requiring extensive modification), allowing focus to be maintained on answering the aforementioned questions. As to the benefit to undergraduate researchers, by applying the tenets learned in their introductory organic chemistry course, they would gain valuable laboratory experience through the use of published strategies, learn to make use of primary references to support their work, and explore the

synthetic chemistry of new related analogs in order to ascertain the structural requirements for activity against HIV. Additionally, this will build confidence and self-reliance, foster critical thinking, and serve as a strong foundation for a career as an independent researcher.

With respect to the proposed chemistry, the described routes would allow the variation of the substituents on the core structure rather easily. In particular, the routes would allow (a) the optimization of the hydrocarbon chains at C(6) and C(8) and one or both of the phenols at C(5) and C(7); (b) an analysis of the stereochemical requirements at C(2) and C(3); (c) the determination of the C(3) substituent requirements; and (d) the assessment of the C(2) and C(4) functional group requirements. In addition, the use of isosteres¹⁷ will be explored to address potential liabilities in the lead compound.

Cost

The cost associated with this research project is estimated below:

Category	Description	Expense
Personnel	2 Undergraduate Research Assistants	\$1820.00
Other Services	SRI ⁶ – Screening of compounds	\$2150.00
Supplies	Chemicals and glassware	\$2500.00
Total Proposed Expenses		\$6470.00

The expenses were proposed based on the following plan of action. Two undergraduate researchers would be hired at a rate of \$14/h and expected to work at least 5 h/week over the course of a semester (13 weeks). These students are very likely going to be juniors or seniors and thus the rate was assigned based on the suggested rate given in the supporting documentation for this grant application.

As mentioned in earlier, I have worked in the past with the SRI as a contract organization for screening compounds in cells for activity against HIV.⁶ At this stage, I plan to use them once again and I assigned a budget of \$2150 for this purpose. Other screening services will also be explored.

The last item included in the expenses for this project is for chemicals and glassware. Presently, my laboratory is devoid of both and as such, I will be starting from scratch. Chemicals and glassware are unfortunately expensive and therefore I have assigned \$2500 for their purchase. Although I would

have difficulty specifying my exact needs for each, I can offer the following estimate as to what would be required.

Glassware needs:

- a) A complete set of round bottom flasks in assorted sizes for running reactions;
- b) Test tubes for collecting fractions during purification;
- c) Separatory funnels, reflux condensers, Erlenmeyer flasks, all of assorted sizes (these are general purpose glassware);

Chemical needs:

- a) Reagents and catalysts for the preparation of new analogs;
- b) Various solvents to use in reactions as well as purification of new products;
- c) Inert gases for instrumentation and reactions which cannot be run in the presence of oxygen

Conclusion

Through the use of synthesis, structural modifications of the natural product, 6,8-DAD, will be realized. Screening of these analogs for biological activity will hopefully identify more potent analogs against HIV and define SARs for this series. Undergraduates will be well trained in art of medicinal chemistry, while applying their acquired interdisciplinary science knowledge toward problem solving. Moreover, the science will continually stimulate them and they will acquire confidence as an independent thinker and researcher. The results established in this early stage of the project, made possible by a Faculty Research Grant, would serve as the basis for a much larger, more encompassing external research grant proposal.

EXAMPLE

2

[REDACTED]

[REDACTED]

**The Personality Traits of
School Psychologists, School Counselors, and Community Counselors**

[REDACTED]

Abstract

One of the challenges for education-related psychology has been predicting how individual differences affect academic and vocational success. The performance of graduate students has been of special interest. Most researchers have evaluated the role of cognitive differences as predictors of graduate student success, but few have examined personality differences as predictors or correlates of success in graduate school. If awarded, a “1st Year at Fordham” Faculty Research Grant (FRG) would support my study designed to explore whether and to what degree the academic and vocational success of graduate students in school psychology (SP), school counseling (SC), and community counseling (CC) programs can be correlated with general personality traits (e.g., extraversion, conscientiousness, and openness to experiences); and/or specific vocational personality differences (e.g., interests and values).

The research proposal is well developed and preliminary data have been collected on approximately 100 graduate student participants at The University of Toledo. Since bringing my research agenda to Fordham University, I have received approval for this study from Fordham’s Institutional Review Board. Part of this expanded protocol is to collect additional data on at least 200 graduate-level participants at both sites during the FRG’s funding period. Outcomes of this study will be disseminated at national conferences; submitted for publication in such peer-reviewed journals as the *European Journal of Personality*; used to generate preliminary data for future research, for which I would seek external support from the Society for the Study of School Psychology in the form of an Early Career Award; and used to provide educators and administrators with user-friendly psychological assessment tools for the benefit of their graduate programs and the students they serve.

Background

Previous studies have supported the idea that a relationship exists between aptitude—a cognitive variable—and graduate school achievement; for example, undergraduate grade point averages (GPAs) and standardized aptitude tests such as the Graduate Record of Examinations (GRE) have both been found to be strong predictors of graduate school success (Anastasi, 1988). However, predicting academic achievement with personality variables is more contentious. Although individual differences in personality have been hypothesized to be related to academic

achievement (Willingham, 1974), the testing of this hypothesis has been largely limited to motivational variables.

However, there are other general personality factors playing important roles in scholastic success, such as perseverance and conscientiousness (Hirschberg & Itkin, 1978). More recently, personality differences among business graduate students were found to be a better predictor of classroom performance than written performance (Rothstein, Paunonen, Rusch, & King, 1994). However, even this expansion to include such traits as extraversion and openness to experiences fails to incorporate vocational personality differences such as interests and values, which would appear integral to understanding the career fitness and consequent achievement of graduate students in SP, SC, and CC programs. Indeed, an extensive literature review reveals only one study (Toomey, Levinson, & Morrison, 2008) centering on the vocational personality of US school psychologists.

The findings of this single study suggests that US school psychologists are predominantly social types, but also indicate their diversity as a group (i.e., the variability of personality types among US school psychologists fell in the second and third positions of codes using John Holland's (1997) Theory of Vocational Personalities and Work Environments). The finding of Social (S) as the dominant personality type among US school psychologists concurs with the fact that US school psychology is a helping profession that requires frequent contact with students. The sub-dominant position of two other personality types—Enterprising (E) and Investigative (I)—could also be perceived as congruent with US school psychologists being required to persuade and influence others to investigate, adopt and use effective strategies and being guided by science-based practices. Therefore, from Toomey, it can be inferred that specific mental health professions might require specific personality traits in order for their adherents to be satisfied and successful in that profession's study and practice. As a consequence of this inference, I have undertaken the present study to (i) complement those focused on aptitude assessment in guiding students' educational and vocational pursuits (Benbow, 1992; Benbow & Lubinski, 1997); and (ii) expand nascent interest in personality assessment in guiding students' educational and vocational pursuits (Achter, Benbow, & Lubinski, 1996; Achter, Lubinski, & Benbow, 1997) through a focus on the specific professions of school psychologist, school counselor, and community counselor.

Prior study, practice, and research experiences in multiple large research institutes have equipped me with a solid foundation to work in a wide range of educational, clinical, and cultural settings and to successfully conduct

research as a sole investigator or as a member of a multi-disciplinary research team. In the past few years, I have completed two book translations, published 10 journal articles, and presented 21 peer-reviewed conference papers at national or international conferences. I became interested in supervision and training issues through my work since 2008 as a trainer of school psychologists. I have worked with my colleagues on projects pertaining to training in school psychology and one of my recent papers was published in *Trainer's Forum*. It is expected that research outcomes from the present study will enhance my expertise in training, supervision, and personnel selection of school psychologists within the field of higher education. Meanwhile, my prior research experiences have laid a strong foundation for me to successfully implement this study.

Contribution

My study will be the first empirical test and comparative study of the general and vocational personality of graduate students in school psychology, school counseling, and community counseling in the United States. My hypotheses are that: (i) the Big Five NEO general personality traits (i.e., Neuroticism, Extraversion, Openness to Experiences, Agreeableness, and Conscientiousness, Costa & McCrae, 1992) can be correlated with academic achievement in each of these graduate programs; (ii) certain of these NEO traits (such as those related to work orientation, achievement striving, openness to experiences, and conscientiousness) will surface as significant predictors or correlates of such achievement, after taking account of the effects of cognitive-related factors (i.e., GRE, undergraduate GPAs); and (iii) some similarity and unique variability of vocational personality based on Holland's theory (1997) will be identified among three groups. For example, the Social type might be a salient type in all three programs because all three professions require face-to-face interaction with clients in need of help. Whereas, in comparison to the SC and CC groups, there might be relatively more Investigative types in the SP group because school psychologists routinely explore, detect, and diagnose psychological disorders through psychometric assessment that requires knowledge of statistics and measurement. If my hypotheses prove true, this study's findings will add to the growing support for teaming personality and preference assessments with aptitude assessments in order to consult and guide mental health graduate students' educational and vocational planning. Replication of the findings is needed in larger samples of subjects across institutes if the findings will be used as the basis for consultation. The potential benefits of the outcomes will be multi-faceted. First, prospective students will be able to consider whether their

EXAMPLE

3

**Symbolic Candidacies and the Significance of Third Parties:
A Historic Analysis of African Americans Seeking Executive Office, 1872-2008**

Abstract

If awarded, a First Year at Fordham Faculty Research Grant would provide me with able research assistants and the necessary materials to successfully launch my second manuscript project. Unlike most academic treatises and mainstream media on the subject, this post-Obama election project is not focused on the absence of a black *president* over the past one and half centuries since the abolition of slavery, but the plethora of black *presidential candidates* that have appeared over that period's duration. By examining in detail how over thirty African American presidential candidates have been incorporated into the electoral process at the executive level, this project introduces the importance of the presidential campaigns of African Americans to US electoral politics generally. Although the participation of African American candidates on the national level may have seemed like far-flung and self-serving endeavors for many of these third party and independent candidates, important institutional mechanisms arose from their inclusion into the electoral system at this elite level. These candidates implemented grass roots organizing on local levels in diverse locales, altered party rules, and groomed local campaign workers for local-level and state-wide offices. Their quest for the executive office not only contributed to an increase in African American elected officials on local levels, but also directly and indirectly enabled the success of the Obama campaign some 136 years after Frederick Douglass's name first appeared on a presidential ballot.

This project is in the genesis stage of research. With the assistance of this grant, background research will be gathered pertaining to the role of African Americans in third parties, symbolic candidacies, and the political party participation of African American elected officials. This pilot data will enable me to prepare and implement a qualitative survey throughout the spring, summer, and fall of 2010. Once the survey data is collected, I plan to

publish an article based on my findings,¹ which will also provide a platform to apply for external support. With the data collected, the following summer I will submit applications for a grant proposal to such prestigious organizations as the Russell Sage Foundation, the Ford Foundation, the Mellon Foundation, and the National Science Foundation (NSF).

Background

African American candidates for President of the United States have represented various political parties and affiliations, but more than two thirds represented independent parties, a trend that provides potential insight into the historical limitations of the dominant two-party system for African Americans. However, despite this trend, African American politicians have also historically depended on an established party as a way to achieve their own political party status.² This process may have ironically undermined the perceived independence and authority of these new political parties, helping to explain why several independent and third party candidates received little to no traction during their national campaigns.

This explanation may find support in scholars who argue that African American voters are inherently practical, and therefore seek to maximize their policy preferences within the dominant party system. This argument suggests that even if African American third party candidates articulated shared preferences with an African American polity, they would still fail to garner substantial support from these voters,³ as African Americans have traditionally believed that although achieving their electoral ends outright may be beyond their reach, they

¹ There are several possible journals of interest. The *Journal of Black Studies*, *Du Bois Review*, and the *Journal of Politics* are the three journals of primary interest.

² Walters, 1984.

³ Extending as far back as the mid-nineteenth century, blacks supported one of the two major parties, and not the Liberty Party, the party of abolitionists.

can act as a balance of power by throwing their support behind the “lesser of two evils” within the dominant two-party system.⁴

However, such compromises do not reflect the interests of the African American electorate through “sincere” and “straightforward” voting. This is the dilemma of the African American electorate, that it must either: 1) work within a dominant two-party system that is designed to disappoint, and thus potentially lead to African American’s alienation and withdrawal; or 2) not work within that system and guarantee their alienation as a consequence of that withdrawal.⁵ Thus by participating in the two-party system, in which roughly ninety-percent of African American voters have historically supported the Democratic Party, African Americans are seeking to *protect* their interests, but at the price of a decreased ability to *advance* their interests. As a consequence, the dominant two-party system has been crippling for African Americans.

Thus my project takes an historical approach to ask whether and how African American political power can be asserted and interests advanced without a party machine that operates within the confines of America’s dominant two-party system. I have already presented a preliminary draft of this project at the most recent meeting of the American Political Science Association in Toronto, Canada this past September 2009. The paper was entitled, “A Historical Analysis of African Americans and the Executive Office, 1872-2008” and generated interest from scholars of voting and elections, as well as scholars of American political development.

Contribution

African American allegiance to the two party system is rational in that it has provided them with a certain level of ideological stability, structural stability in terms of choices (even if

⁴ James Weldon Johnson (1924) “...How can the Negro expect any worthwhile consideration for his vote as long as politicians are always reasonably sure as to how it will be cast?”

⁵ Hamilton, 1973.

that choice is between the lesser of two evils), as well as a percentage of black political leaders and leadership.⁶ However, that same allegiance is irrational to the extent that the gained ideological stability fails to accurately reflect and advance African American interests; the structural stability it provides constitutes picking the lesser of two evils rather than a truly preferred platform; and the percentage of African American political leaders and leadership has not risen to the level of being truly representative, particularly at the national level. This tension highlights both the inherent limitations of America's dominant two-party system for African American candidates, as well as both the importance and limitations of the effects African American third-party candidates have had — and can have — on that system.

By employing mixed methods of archival, quantitative, and qualitative research, my project will thus present scholars of electoral politics, American political development, and African American Studies with an incisive examination of that tension, along with implications for its resolution that will resonate with the next generation of African American candidates and voters. To ascertain the effect of third party candidates, I will conduct a detailed analysis of African American candidates as well as the voting patterns of African Americans over the past fifty years. A national qualitative survey of past and present African American elected officials and candidates, as well as interviews with those who reside in the NYC metro region, will also be conducted to create detailed political narratives of the effects of African American third party candidates on local and state level politics. This combination of qualitative and quantitative data will help support claims pertaining to increased participation of African Americans in the US electoral process due to the long lasting effects African American candidates have had as a result of running for this nation's highest office.

⁶ Walters, 1984.


Cost

With the generous support of the First Year at Fordham Faculty Research Grant, I will be able to employ two undergraduate research assistants to conduct substantive archival research at the Schomburg Center for Research in Harlem, NY. I will also use these research assistants to edit and disseminate a national survey, the necessary supplies and equipment for which constitutes the balance of my costs. Some of this equipment, particularly the laptop, will also be necessary for me to conduct research on site at the Schomburg Center as well as interviews with subjects throughout the New York metro region.

Conclusion

To fully understand the historical significance of President Obama's election, it is necessary to shift our focus away from the absence of an African American president over the past one and half centuries in order to examine the more important issue, from which this absence distracts us: the origin, legacy and lessons of the thirty African American presidential candidates since Frederick Douglass's name first appeared on a presidential ballot. Having already generated interest from a variety of scholars at the American Political Science Association, *Symbolic Candidacies and the Significance of Third Parties* thus promises to be a valuable contribution to my career, my discipline, and the continued development of American Democracy at this historic moment.

EXAMPLE

4



*Youth Movements in Post-Communist Societies:
A Model of Nonviolent Resistance*



Abstract

If awarded, a Faculty Research Grant would cover critical costs for international field work in support of my current book project, titled *Youth Movements in Post-Communist Societies*, for which Fordham's Department of Political Science has already provided generous support by granting me an unpaid leave of absence for spring 2010.

Over the past decade, a wave of youth mobilization against repressive political regimes has swept the post-communist region. Thousands of young people took to the street to demand political change during the election period, a critical juncture in domestic politics. These protests have exposed a litany of problems that beset non-democratic political regimes and inspired civic activists worldwide. In 2000, Serbia's social movement Otpor played a vital role in bringing down Slobodan Milosevic. Emulating the example of Otpor, Georgia's Kmara in 2003 and Ukraine's Pora in 2004 mobilized youth to press for the turnover of power. Similarly, the Belarussian youth movement Zubr in 2001/2006 and Azerbaijani youth groups Magam, Yeni Fikir and Yokh in 2005 have attempted, albeit unsuccessfully, to mobilize large numbers of young people and propel a democratic breakthrough. The purpose of this project is to provide a comparative analysis of nonviolent resistance in five post-communist states – Azerbaijan, Belarus, Georgia, Serbia, and Ukraine – and offer an explanation for divergent movement outcomes.

In this study, I argue that the analysis of tactical interaction between youth movements and incumbent governments is vital to understanding divergent movement outcomes. By tactical interaction, I mean a chess-like game in which movement participants display tactical innovation and incumbent governments, in turn, adjust their tactics to subvert unorthodox forms of mass mobilization.¹ The primary empirical basis for this research is interviews with former movement participants. I have already made a field trip to the region in the winter of 2008 and began to interview former movement participants. With the support of Fordham's Department of Political Science and the Faculty Research Grant, I intend to make a second trip to the region in the winter of 2010 to collect additional data. Upon the completion of data collection, I intend to prepare and submit a book proposal to academic presses by May 2010.

Background

The debate over the relative importance of structure and agency in accounting for movement outcomes occupies a prominent place in social movement literature. Proponents of the structural approach argue that certain features of the political environment determine the likelihood of movement success (for a review, see Meyer 2004), while another strand of research stresses the importance of agency in explaining movement outcomes. In agency-centered accounts of social movements, some scholars examine the impact of diffusion on movement strategies (for a review, see Strang and Soule 1998).

¹ On the conceptualization of tactical interaction, see McAdam (1983).

In recent scholarship on electoral revolutions in the post-communist region, this debate has received considerable attention. Some scholars argue that the strength of the repressive political regime is the best predictor of political change in the aftermath of fraudulent elections (Way 2008, 2009). Another strand of research underscores the importance of ideational factors. Specifically, social scientists draw upon diffusion literature to explain a wave of electoral revolutions (Beissinger 2007; Bunce and Wolchik 2006, 2009). Unlike most previous work, however, *Youth Movements in Post-Communist Societies* aims to trace the dynamics of cross-border political learning by both social movements and incumbent governments.

A distinguishing feature of this project is the dynamic approach to the study of youth movements. While scholars have scrutinized processes of tactical interaction between challenger organizations and the ruling elite in advanced industrial democracies (Beckwith 2000; McCammon 2003; Minkoff 1999), much less research on this topic was done in non-democracies. Yet, the dynamics of nonviolent resistance in non-democracies are likely to play out in a different manner. The repressive nature of the non-democratic political regime imposes additional constraints on the range of protest strategies that social movements can adopt and expands the magnitude of discretionary power that the ruling elite can exercise to maintain the status quo and stifle the opposition.

The proposed study will build upon my previous research about youth and politics in the post-communist region. Earlier findings from my research have appeared in *Canadian Journal of Political Science*, *Comparative Politics*, *Communist and Post-Communist Studies*, *Europe-Asia Studies*, *PS: Political Science and Politics*, and *Youth and Society*. The financial support from Fordham University will facilitate the completion of my first book-length manuscript in a timely manner.

Contribution

Youth Movements in Post-Communist Societies seeks to contribute to existing literature in two ways. First, this study seeks to strengthen our understanding of political learning in non-democracies. Based upon semi-structured interviews with former movement participants, media reports, and original documents, this analysis aims to elucidate how the cross-national diffusion of ideas affects the tactics of youth movements and incumbent governments. In particular, this inquiry investigates how autocratic incumbents turn around the use of modern technology to contain the movement's growth. Second, this book-length study expands the growing literature on electoral revolutions by focusing on the tactics of youth movements and examining cases of both success and failure. Most empirical work has focused on cases of successful mass mobilization (Aslund and McFaul 2006; Kuzio 2009; McFaul 2005; Wheatley 2005), while much less attention has been accorded to abortive attempts of civic activists to bring about political change (Marples 2006; Silitski 2006; Valiyev 2006). Social scientists and civic activists, however, can draw valuable insights from the analysis of movement defeats.

A strong indicator of this project's research potential is the support it has received from the Social Science and Humanities Research Council of Canada and Stanford University's Center on Democracy, Development, and the Rule of Law. These fellowships enabled me to make a field trip to the region and then present preliminary findings at the following academic venues:

- Kennan Institute, Woodrow Wilson International Center for Scholars, Washington, D.C, January 15, 2009
- The Eleventh Annual Graduate Workshop, Kokkalis Program on Southeastern and East-Central Europe, Harvard University, February 12-13, 2009
- Institute of Slavic, East European and Eurasian Studies, University of California-Berkeley, March 4, 2009

- Comparative Politics Workshop, Department of Political Science, Stanford University, April 14, 2009
- The Annual Conference of the Canadian Political Science Association, Ottawa, May 27-29, 2009

Building upon these experiences, the completion and publication of *Youth Movements in Post-Communist Societies* will stimulate further academic interest in the study of youth activism and invigorate a policymaking debate about strategies for promoting social justice and human rights in non-democracies. The results from this research will inform the donor community of some pitfalls associated with adopting the same approach to democracy promotion in different repressive regimes. Furthermore, the arguments presented in *Youth Movements in Post-Communist Societies* can be translated into practical tools for civic activists in the post-communist region and beyond.

Cost

I request funding to cover some costs associated with international travel. To interview former movement participants, I will fly to Ukraine and travel across the country. In addition, I intend to establish affiliation with the National University of Kyiv-Mohyla Academy and use their library resources.

Conclusion

Youth Movements in Post-Communist Societies will build upon my previously published and generously supported research by enabling not only my first book-length manuscript, but also a critical contribution to social movement literature. Its innovative analysis of tactical interaction in five post-communist states will benefit scholars, policy makers, international donors, and civic activists.

EXAMPLE

5

Divine Fathers, Divine Sons: Christian Theology and Family Politics in the Roman Empire

Abstract

If awarded, a Faculty Research Grant would enable me to hire two long-term graduate student research assistants to facilitate my completion of a work of interdisciplinary scholarship: *Divine Fathers, Divine Sons*. During the Roman imperial era, two famous figures received public acclamation as both “god” and “son of god”: the Roman emperor and Jesus Christ. My project investigates the ramifications stemming from the two most influential people in the Roman Empire having been considered divine sons of divine fathers. Specifically, how did the theological concept “son of god” resonate in the social and political contexts of the Roman world?

Through engagement with recent scholarship in Roman history—especially studies of family relationships, imperial ideology, and emperor worship—my research will produce the first monograph addressing this question. The book will be a fresh and provocative history of theology, politics, and family relations in early Christianity. The manuscript is in the final stage of review at Oxford University Press, from which I have recently received two positive readers’ reports. One of the readers predicted that the project “will help significantly to change the whole field,” and “the market for the book is potentially huge.” However, if the delegates from Oxford University Press decide not to move the project forward, I have received other interest from Yale University Press and Mohr Siebeck (Germany). I am also considering the “Transformation of the Classical Heritage” series at University of California Press because of its list of innovative monographs in Roman history and early Christianity.

The lion's share of the research and writing for *Divine Fathers, Divine Sons* has already been accomplished, including a completed draft of the manuscript. With research assistance from able graduate students in theology and classical philology, I will be able to capitalize on the interest this work has generated by going to press with one of the aforementioned scholarly publishers within the next twenty-four months.

Background

Divine Fathers, Divine Sons is a big-picture, thematic contribution to the study of early Christianity. Its chief objectives are (a) to critique the conceptual framework within which the term "son of God" has usually been construed in biblical scholarship, particularly in the work of Larry Hurtado, Martin Hengel, and James Dunn; and (b) to re-interpret divine sonship in the socio-political context of early Christianity, specifically that of Roman family politics and imperial ideology, by building upon the recent work of such historians as Simon Price, Clifford Ando, Christiane Kunst, and Ittai Gradel. Some major presuppositions of scholarship on the New Testament and early Christian theology will be challenged, but from a firm foundation rooted in rational argument from primary and secondary sources. The book will be controversial without appearing confrontational or strident.

Other experts have vetted these historical and theological arguments and lent their support to my project. *Divine Fathers, Divine Sons* originated out of my doctoral work at Yale in Religious Studies and Classics, which was supported by an external merit fellowship (\$20,000) from the Catholic Biblical Association. A portion of chapter 3 of my planned text won the annual prize (\$2,300) from the Yale Classics department, and part of chapter 4 received the "Best Paper" award at a Society of Biblical Literature conference. I look forward to fulfilling the

promise these institutions and scholars saw in my early work by soon being able to present the full text of *Divine Fathers, Divine Sons* and its innovative arguments.

Contribution

Divine Fathers, Divine Sons' historical narrative proceeds in the following way. It begins by showing how the theological doctrines forged at the Council of Nicea have hindered our ability to interpret the "son of God" language in the New Testament (ch. 1). It then emphasizes two historical contexts that can help us interpret that language anew: the figure of the Roman emperor as "son of god" (ch. 2) and the unique importance of adoption in Roman society and imperial ideology (ch. 3). In short, when we focus on the fact that the most powerful "son of god" in the Empire gained his sonship by adoption, we are able to read several early Christian texts in unexpected ways. I treat the Gospel of Mark at length, as the first narrative Christology and one that has long been connected with Rome (ch. 4). I then bring the reader forward from the first century to Nicea, showing how the resonance of "son of God" changed over time (ch. 5).

As an interdisciplinary, thematic, and occasionally iconoclastic project, *Divine Fathers, Divine Sons* will have a broad audience. I see the market for the book as several intersecting circles. The center is undoubtedly New Testament studies because my argument engages a core concept for several New Testament authors. I have also received great interest from elsewhere in religious studies, especially from scholars of early Christianity and systematic theologians. For example, my final chapter offers a new take on the development of early Christology through the fourth century—by charting the shifting relationship between begotten and adoptive metaphors—that will be of interest to scholars of the Nicene era. Furthermore, my argument has

implications for Trinitarian theology, because it offers both a new way of discussing the human/divine relationship and an alternative to progenitorial / begotten language. Roman historians will also be interested, especially in the book's synthetic presentation of the *status quaestionis* on Roman divinity and emperor worship and its original analysis of the competing family ideologies concerning natural and adopted sons in the Roman Empire. Finally, I have received inquiries from political theorists because of their recent and intense interest in the intersection of religious power and political power. I am fortunate to find my research at the core of this nexus and to be one of a growing set of scholars examining the relationship between the Roman emperor and Jesus Christ—the two famous “sons of god”—with nuanced theories of power and cultural interaction.

Cost

Divine Fathers, Divine Sons covers the first four centuries of Christianity, replete with primary material from Greek, Roman, and Christian sources of the period. Therefore, a doctoral student versed in early Christian theology would provide critical research assistance with the voluminous secondary literature on Christology in the third and fourth centuries. Readers of my manuscript have unanimously recommended that I expand and deepen my research on those centuries—the book's final chapter—during the revision process. A second doctoral student (or students) with impeccable knowledge of Greek and Latin would prove crucial in proofreading, cross-checking, and formatting the hundreds of original-language translations and citations throughout the book. These two assistants would save me hundreds of hours of labor over the coming year, help to speed this manuscript toward publication, and ensure its accuracy and thoroughness.

To gain research assistants with the prerequisite competence in scholarly theological research and classical philology will require a competitive wage of \$20/hour. The volume of work would require a commitment of approximately four hours/week to complete the text within the academic year. Therefore I have calculated my budget for completing *Divine Fathers*, *Divine Sons* as follows: I have budgeted for two assistants, each for an average of 4 hours per week for two semesters (or one semester plus one summer, depending on their availability).

- 4 hrs per week x 25 weeks = 100 hrs per assistant
- 100 hrs x \$20/hr = \$2000 per assistant
- 2 assistants = \$4000 total

Conclusion

Divine Fathers, *Divine Sons* will be the first monograph to provide an interdisciplinary, thematic, and occasionally iconoclastic examination of how the theological concept “son of god” resonated in the social and political contexts of the Roman world—a potentially field-altering contribution.

Funding for two graduate research assistants will expedite my completing this promising project in order to capitalize on the hearty encouragement it has received from senior scholars in the fields of early Christianity and Roman history—at Yale, Fordham, and beyond—and publish *Divine Fathers*, *Divine Sons* with a major scholarly press within the next two years.

EXAMPLE

6

Faculty Research Grant Narrative:

A Variational Approach to Vesicle Membrane Modeling



Abstract : This project is a mathematical study of vesicle membrane fusion and lipid membrane mechanics. The cell membranes of almost all living organisms, as well as the membranes that surround a cell's nucleus and many other sub-cellular structures, are comprised of two thin layers of lipid molecules—the bilipid layer or lipid membrane. Vesicles are small sacs that life uses to store and transport substances in and out of the cell. A critical component of the vesicle's transport function is the ability of the lipid layer to fuse with other lipid layers. However, the mechanism underlying vesicle membrane fusion is not well understood, despite how commonly it occurs in nature and how reproducible it is to great precision in experiment. Moreover, the membrane fusion mechanism is not directly observable as it happens at extremely small length and time scales. Hence, vesicle membrane fusion remains one of the most basic open problems in biophysics. This project proposes to simulate and study the origins of fusion by casting vesicles in a sophisticated mathematical model based on simple physical principles. Constructing the model and performing detailed numerical simulations will give spatial and temporal information not accessible by experiment. The project goals are: establish long term collaborations with biologists; obtain funding from the NSF and NIH; and make contributions to understanding the fundamental physics of lipid membranes.

This project is running in collaboration with Robert Eisenberg, PhD and Fredric Cohen, PhD of Rush University Medical Center in Chicago. Initiated earlier this year, the investigator and collaborators have to date agreed on a preliminary model. The model, a complicated system of partial differential equations, is solved numerically. Preparations are being made to run large scale simulations in October in the Laboratory Computing Resource Center at Argonne National Lab. Preliminary results from these simulations will be reported in a paper to be submitted to *Physical Review E* by December 2010. A more physically sophisticated model will be introduced and simulated in the early Spring for presentation at the Biophysical Society meeting in March.

Two grant applications will result from this work. The first will be to the NSF's Applied Mathematics Division in November 2010 and the other to the NIH in the fall of 2011. The investigator's continual application to these national grants will greatly be aided by the support of a "1st Year at Fordham" Faculty Research

Grant (FRG). The FRG will also permit the investigator to increase his scholarship and visibility in the applied and interdisciplinary mathematics community. Funds would be used to cover travel expenses to the collaborators' university, bring the investigator's collaborators to Fordham for face to face planning and discussion, employ Summer Undergraduate Research Assistants and acquiring a workstation for undergraduate researchers to implement large scale numerical experiments.

The remainder of this narrative is divided into background on the investigator and the mathematical field within which this project is framed and expected contributions of the project. The mathematical methodology is then described, followed by an outline of project expenses and a conclusion.

Background: The mathematical formulation of problems involving fluids and structures—such as the formulation the investigator is proposing to lend to the study of lipid membranes and vesicle fusion—has a long history. Beginning with Van der Waals theory of phase transitions and Landau's description of magnetism, this history includes the DeGennes' and Erikson-Leslie's theory of liquid crystals before progressing to today's popular approaches of using mathematical field theories and numerical methods to describe the processes of multi-physics condensed matter. Studies of liquid crystals [14], polymer electrolytes [16], super conductivity [5], charged gels [18], blood clotting [9] and blood flow [10] are a few examples. The range of physics addressed in this field is equal to the analytical and numerical techniques used. Building upon the investigator's dissertation and prior published work (see bibliography and CV), a guiding principle of the investigator's work is formulating comprehensive theories capable of guiding mathematicians in multi-physics problems, [22, 23]. It is from this foundation that the investigator forged collaborations with Drs. Eisenberg and Cohen, whose respective roles as Chairman and Director of Rush University Medical Centers Division of Molecular Biophysics and Physiology places their collective left foot firmly in physics while the other falls in the field of biology, where there is an even greater need for the comprehensive approach mathematics provides for understanding otherwise irreducibly complex systems.

Contribution : Biological membranes rearrange themselves in many biological processes. Fusion is a phenomenon specific to lipid bilayers, enabling transport of waste and engulfing of molecules by cells. It is the means by which a virus infects a cell and by which a sperm fertilizes and egg. Fusion occurs thousands of times in a single synaptic transmission, the firing of a nerve cell, [3]. A fusion pore, typically nanometers¹ in diameter, forms in a few nanoseconds. Well below the wavelength of light in size and too fast to be captured by today's fast digital microscope cameras (which image at just below milliseconds), the full fusion dynamic cannot be observed directly, [11]. Although it is one of the fundamental mechanisms of all living organisms, the detailed pathway by which two bilipid layers connect is unknown ([4]) and the energy required to

¹nano is the SI prefix for 10^{-9} .

undergo those pathways presently proposed is prohibitive, [13]. Moreover, traditional membrane mechanics in use by biophysicists today is a conservative, equilibrium theory and so cannot, a priori, describe the time course and the evolution of a true system. It is precisely because of this apparently irreducible complex system at the nexus of biology and physics that mathematics—and precisely this proposal—is poised to make a critical contribution to our understanding, not only of vesicle membrane fusion, but how to pursue an interdisciplinary agenda. Therefore, this project’s use of well established mathematical tools will have a four-fold impact.

First, the mathematical approach will enable investigators to predict dynamics of fusion by positing consistent physical energies and initial data. Therefore, in stark contrast to traditional approaches in biophysics where information is taken from static or a priori configurations (e.g. spheres), [1, 12], the mathematical model will calculate the cascade of bilipid layer energy, forces and configurations as consequence of the field theory and be able to quantify physical parameters from more well established experimental models, [1]. See figure 1. Because the calculations yield values of all key variables over time, movies that precisely illustrate the time evolution of the membrane configuration can be generated. This allows one to appreciate changes over time, without having to refer to the physics or equations that underlie the fusion processes. Second, by thus facilitating the comparison of simulation with experiment, this study will challenge researchers’ current hesitation to use detailed partial differential equations to model biological phenomena simply because of their (biological) complexity. If successful, the investigator’s study will demonstrate that such complexity yields to concise and elegant mathematical descriptions which are therefore essential for research in biology. Third—a related impact—the success of this study will provide further evidence that the future of science will be dictated by interdisciplinary work. This project—along with the investigator’s other research involvements—require expertise in chemistry, biology, engineering, mathematics and numerical methodology. Fusion is an example of merely one problem where the constant and close relationship between researchers in these areas is essential to making real progress. For this reason the investigator is fortunate to already have relationships with Rush University Medical Center and will also seek to work with biologists local to Fordham University and at the Einstein Medical School. Working in the context of these collaborations will also prove formative for future generations of scholars as the study engages undergraduate and graduate researchers to conduct numerical experiments. Finally, many mathematical tools are used in the formulation of fusion. These include geometry, partial differential equations, functional analysis and numerical methods. Writing a mathematical formulation of fusion leads to several interesting mathematical questions related to stability [2], well-posedness and the plethora of the connections between geometry and differential equations, [6, 19, 24].

Methodology : The primary impact of this project is gaining an enhanced understanding of vesicle membrane fusion. We begin by positing a membrane energy, denoted by E , which is defined in terms of a continuum variable $u(x, t)$ encoding the location of the membrane. The definition of $E[u]$ must be relatively simple, yet detailed enough to capture the physical energies relevant to the system. Typically $E[u]$ is a functional defined over a space of functions with certain differentiability. We use a functional motivated by the theory of phase transitions, [19], whose efficacy was demonstrated in [6, 8];

$$E[u] = \int \frac{\epsilon}{2} \left(\Delta u - \frac{1}{\epsilon^2} f(u) - \frac{c}{\epsilon} g(u) \right)^2 dx + \frac{M}{2s} \left(\int \frac{\epsilon}{2} |\nabla u|^2 + \frac{1}{\epsilon} F(u) dx - s \right)^2 + \frac{N}{2v} \left(\int u + u_0 dx - v \right)^2.$$

The energy includes the surface tension, incompressibility and curvature effects of the classical Helfrich model. The representation is, however, more flexible and can readily account for multicomponent systems, inhomogeneities, and changes in topology. By solving the gradient descent equation

$$u_t = -E'[u], \quad u(0) = u_0, \tag{1}$$

one may explore the space of stable, equilibrium configurations of the vesicle. Here $E'[u]$ is the Euler-Lagrange derivative of $E[u]$. Equation (1) alone is not sufficient to describe the dynamics of real physical systems, especially when fluid motion is involved (indeed vesicles typically are in an aqueous medium.) For our purposes it is sufficient to solve the Navier-Stokes equations

$$\begin{cases} v_t + v \cdot \nabla v + \nabla p = \lambda \Delta v + f, \\ \nabla \cdot v = 0, \end{cases} \tag{2}$$

for the velocity $v(x, t)$ of the fluid (in fact, it is sufficient to solve the simpler and well-posed Stokes system as the flow at the micron length scale is typically of low Reynolds number.) The vesicle moves with the fluid and imparts the force $f(x, t)$ in (2) on the fluid. Writing down the form of f from physical considerations alone is typically difficult. However, using a variational formalism from the calculus of variations, one defines $f(x, t) = -E'[u] \nabla u(x, t)$. In total, the system enjoys the following property; the total energy

$$\frac{1}{2} \|v\|_{\mathbf{L}^2}^2 + E[u] \tag{3}$$

is nonincreasing. In mathematics, this property—that the energy is nonincreasing—is called an energy law and is the basis of the mathematical existence theory for (2). Profound to experimentalists is the following fact; the exchange of energies, fluid and vesicle motion and forces are outputs from these equations.

These equations are carefully discretized, using finite differences, and the discrete equations are solved numerically. This step involves a Newton's method and solving a system of linear equations with 100,000 and plus unknowns. On a standard workstation, this takes a minimum of four hours. The results from the simulation are stored and then interpreted. The entire process of modeling biological systems in this way is time consuming and fraught with technical complexities. Solving a large system of linear equations,

especially the Stokes system, requires a great deal of sophisticated numerical linear algebra. Moreover, care must be taken in choosing the spatial discretization—so that the system is even solvable—and the temporal discretization so that the energy law (3) is preserved (and that the numerical method is stable). Numerical schemes, designed specifically for this field theory, are implemented. However, the advantage of modeling a biological system in this way is that, because the configuration of the system is known at all points in space and time, the results contain information not accessible by experiment. It is for this reason that this variational approach to vesicle membrane modeling holds such promise for solving one of the most basic open problems in biophysics: vesicle membrane fusion.

Cost : Because of the time consuming, technical complexities of the mathematical modeling at the core of this inherently interdisciplinary—and consequently cross-country collaborative—project, the investigator seeks expenses to: (i) facilitate face to face meeting with his co-researchers at facilities that can accommodate both their simulation and experimental methods; (ii) employ one to two Summer Undergraduate Researchers Assistants at Fordham in preparing and conducting simulations; (iii) presentation at the Biophysical Society meeting in March 2011, which will be necessary to obtain peer feedback in preparation for future NIH funding applications; (iv) purchase one workstation devoted to remotely running resource intensive, parallelized, multiday simulations. It will be necessary for implementing the numerical routines by undergraduate researchers, who otherwise do not have access to such computing resources.

Conclusion : The proposed project builds upon the investigator’s training in applied mathematics – particularly fluid mechanics, complex fluids and numerical simulation—and a platform of publications on the mathematical framework for modeling vesicles using the classical Helfrich energies, the Willmore energy and Euler number, [6, 7] as well numerical methodologies for solving complex fluid problems involving interfaces and electrostatic effects, [20, 21, 22]. The mathematics this project will employ is largely based on these works, and as such it is a natural extension of his work to bring this expertise into collaboration with researchers in diverse disciplines. These collaborators steer the investigators work to design more detailed mathematical models which are directly relevant to the types of questions biologists are interested.

By cementing relationships already initiated with biophysicists at a premier research institution, the proposed paradigm of interdisciplinary scientific inquiry with mathematics at its core will enable the investigator as a junior scholar to establish a track record in conjunction with the support of senior experimentalists to increase funding opportunities for the investigator and Fordham. These goals are critical to attracting distinguished researchers and funding to Fordham, increasing the research profile of the University, promoting the investigator’s grantmanship and engaging the next generation of researchers and education at the undergraduate and graduate level.

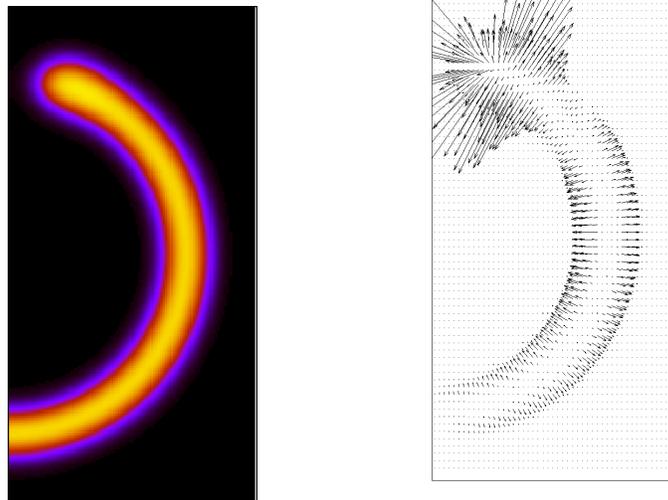


Figure 1: A calculated axially symmetric vesicle with pore (left) and the force it generates on the fluid (right). The concentration of the force at the rim of the pore—typically called line tension, an input in traditional membrane mechanics—as an output of the model.

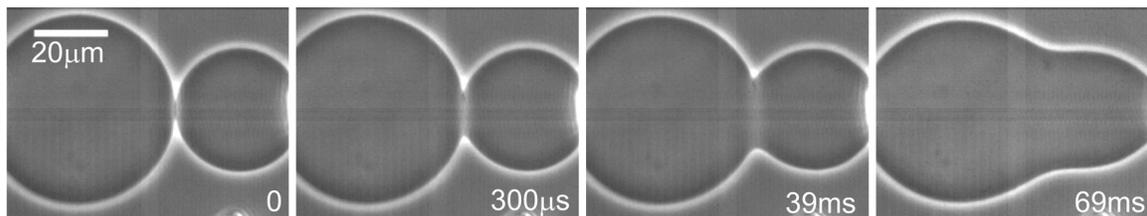


Figure 2: The merging of giant vesicles (taken from [11].) Fusion has already occurred in the first image frame.

EXAMPLE

7

**Shifting Values:
*Age and the Paradox of Well-Being***

Abstract

Socioemotional selectivity theory (SST; Carstensen, 1995) posits that life goals change as a function of perceived available time. Namely, those who perceive limited time left in life prefer emotionally meaningful goals versus goals with long-term payoffs. Further, there are age-related increases associated in focusing more on emotional aspects of situations, using coping strategies that are emotion-based over those that are problem-based, and opting for emotionally gratifying social contacts over ones that are novel. Although these changing preferences are fairly well documented, few studies have systematically examined whether there is a commensurate change in *values* with increased age (but see, for example, Ryff, 1989). The purpose of this project, therefore, is to design a questionnaire that systematically assesses the values individuals place on relevant constructs (e.g., fluid ability, crystallized ability, memory, processing speed, wisdom, stable mood, affect, career success, social relationships, etc.) and examine whether those values differ across age. While several questionnaires exist to study values (e.g., The World Values Survey, Rokeach Value Survey, Pairwise Comparison Value Survey), none to my knowledge evaluates values placed on different cognitive abilities. I hypothesize that the measure designed for this project, to be named the Value Questionnaire, will help explain why age has little to no relationship with individuals' subjective well-being – the “paradox of well-being”.

Data collection will be accomplished with an on-line survey through a company that can target participants within a specific age range, and should take approximately six weeks. The data collected through this project will be used for a manuscript titled “Do values shift with age?” that will be submitted to *Psychology and Aging*, a top-tier aging journal. Also, once the psychometric properties of this measure have been established, it will be used as a cornerstone for a grant application for a large-scale study to the National Science Foundation (NSF) investigating the relationship between values placed on relevant constructs and performance (or ratings) on corresponding constructs (and whether these relationships differ with age). For example, we can

examine whether actual performance on tests of fluid ability (i.e., tests that measure the ability to solve novel problems that are designed to be independent of knowledge) correlate with the value placed on fluid ability.

Background

Subjective well-being (SWB) is generally considered to be a multi-faceted construct, with one major facet being a cognitive-judgmental component characterized by ratings of life satisfaction. Increased age is associated with physical and cognitive declines, increased loss of loved ones, and a potential loss of financial independence. However, despite these age-associated changes, there is little to no effect of age on ratings of SWB. In fact, there is evidence that ratings of life satisfaction may increase with age (e.g., Siedlecki, Tucker-Drob, Oishi, & Salthouse, 2008). This intuitively contradictory relationship has been labeled the “paradox of well-being”.

To explain the difference in predictors of life satisfaction as well as SWB in general, Oishi and colleagues (Oishi, Diener, Suh, & Lucas, 1999) have proposed a value-as-a-moderator model in which individual, cultural, and situational variation in predictors of SWB can be predicted by salient values. For example, Oishi et al. reported that in a study of college students, ratings of SWB were more influenced by grade satisfaction for those student participants who valued achievement as compared to those who did not.

In previous work my colleagues and I were interested in whether there were different predictors of life satisfaction across age. We found that negative affect (i.e., depression, anxiety, and neuroticism) was a consistent predictor of life satisfaction across adulthood but whereas fluid ability was a significant predictor of life satisfaction in young and middle-aged adults, it was not a significant predictor in older adults (Siedlecki et al., 2008). Using the value-as-a-moderator model as a framework, we hypothesized that because fluid ability was less relevant to older adults who may be retired and out of the work force, it was valued less and therefore not a significant predictor of their life satisfaction. However, we did not measure values per se, but only performance on cognitive tests as a proxy for values.

Therefore, the proposed project will build on this previous work by using the value-as-a-moderator model in order to directly assess whether shifting values compensate for the losses commensurate with aging, and thus constitute the key to understanding the paradox of well-being.

Contribution

This project is important for several reasons. First, a validated measure that evaluates values placed on cognitive abilities will fill a gap in the literature on self assessment. Second, the project will allow for a systematic examination of differences in values across age. Third, it will provide the foundation for a large scale study examining the relationship between subjective ratings on the Value Questionnaire and actual performance and ratings on the measured constructs. However, even beyond scholarship, this project has the potential to redefine “successful aging” for policy-makers, caregivers, and the aging themselves. It will do so by taking into consideration not only the current measures of cognitive and physical functioning, but also the critical component of SWB.

The purpose of this study, therefore, is to design a measure that systematically investigates values placed on relevant constructs. To this end, I aim to develop a measure that assesses subjective values and administer the measure to a group of 300 individuals across the age range (100 individuals from each of three age ranges: 18-40, 41-64, and 65+). I will examine the values placed on a variety of cognitive constructs (e.g., fluid ability, crystallized ability, memory, processing speed, and wisdom), and non-cognitive constructs (e.g., stable mood, affect, career success, social relationships with family and friends, and social networks) and determine whether these values differ across age. I will also obtain ratings of life satisfaction and assess personality and affect.

To facilitate data collection the questionnaire will be administered on-line through Zoomerang.com. I have prior experience with on-line data collection (Siedlecki, in preparation) and believe Zoomerang is ideal for this project because it will target the same number of adults

within the pre-specified age ranges. Previous research has established that data collection via the web is reliable, valid, reasonably representative, and efficient (e.g., Meyerson and Tryon, 2003).

Psychometric properties of the questionnaire will be evaluated with item response theory (IRT) and confirmatory factor analyses (CFA). Convergent and discriminant validity will be examined for the measure, and analyses will be conducted examining the relationship between values, age, life satisfaction, and measures of personality and affect within a structural equation modeling framework.

Cost

A quote from Zoomerang (on 9.12.09) puts the cost of recruiting 300 individuals within the pre-specified age range to complete a 20 minute survey at approximately \$9 per person, resulting in a total of \$2,700. Although other online data collections sites may cost less (e.g., surveymonkey.com) those sites cannot be used to target specific populations and as a result the respondents tend to be fairly young and not evenly distributed across the age span. For this project it is essential that the respondents be evenly distributed across the age range.

The second component of this grant is \$1,200 to pay a graduate assistant to organize the data and perform IRT analyses on the data to identify questions that may not belong on the measure. Although I have extensive experience with CFA (e.g., Siedlecki, 2007; Siedlecki, Honig, & Stern, 2008; Siedlecki et al., 2008), I don't have expertise in IRT analyses. Therefore, it is expected it will cost approximately \$20/hour to retain a graduate assistant with the appropriate experience to satisfactorily accomplish these tasks within 60 hours.

Conclusion

The proposed project, *Shifting Values*, will enable me to develop a questionnaire that can be used to further investigate the "paradox of well-being" and shed additional light on an important element of successful aging. A manuscript documenting the findings of this study will be submitted to *Psychology and Aging*, one of the top journals in the field of aging and psychology. Further, the questionnaire will be used as an integral component in a larger study for

which I will seek NSF funding. The larger study will ascertain whether subjective values correlate with performance on the constructs measured by the questionnaire, and whether those relationships differ across age. Thus I am grateful for the opportunity to apply for a First Year at Fordham Faculty Research Grant to support the successful launch of this next phase in my research agenda.

EXAMPLE

8

PAINTING IN THE PRIEST:
SACERDOTAL ICONOGRAPHY AND THE IMAGING OF LATE MEDIEVAL FEMALE MONASTICISM

Abstract

Priests loomed notably large in late medieval and early modern European culture--so much so, perhaps, that modern scholarship has long overlooked them and their representations in art. My current book project, unique in the field, examines the emergence of a newly expressive sacerdotal, or priestly, iconography in 14th- and 15th-century Italy. It does so by focusing on images of an important late medieval relationship: that of certain pious women, especially female mystics like Catherine of Siena, and the male clerics who served them as confessors, disciples and, ultimately, hagiographers.

Growing out of my doctoral dissertation, *Painting in the Priest* is, in the view of advisors, substantially complete. In the case of approximately one dozen images, however, I still lack adequate photographic reproductions. These include an important subset of unpublished or rarely published historiated initials from illuminated Siense choir books. To finish the project, which I am presenting to potential publishers this fall (2009), I will spend a portion of next summer in Italy arranging for professional photographic services in Siena, Rome, and Genoa to obtain the necessary images. The Fordham Faculty Research Grant will significantly aid me in that effort and therefore speed completion—within the next twelve months—of the planned monograph.

Background

Inherently inter-disciplinary, *Painting in the Priest* is nevertheless a conscious exercise in art history that reflects my long-standing research interests, methods and goals. This book will expand on my exploration of iconographic innovation, mechanisms of devotion, religious culture, and social history, by analyzing visual images that refer to

unexpectedly complex personal bonds between often celebrated holy women and their relatively obscure clerical collaborators. Viewed in the context of late medieval penitential culture, Eucharistic devotion, and hagiographic production, these depictions open a window onto an equally significant but generally neglected phenomenon of the period: the rising social profile of priests and the increasingly conscious deployment of priesthood as an iconographic motif. Without neglecting traditional methodologies (style, iconography, connoisseurship, and visual traditions), I am engaged in a deeply contextual art history that will expand and enrich these methods with the study of function, patronage, gender, and other social, political, economic, and religious circumstances.

At the same time *Painting in the Priest* will draw together several intersecting scholarly concerns of both historians and art historians from the last thirty years. Chief among these has been the recovery for history of a now indispensable category of religious figures, female mystics, and the positing by Caroline Walker Bynum and others of a “feminized” religious culture that dominated the late medieval period.

Understandably, in much of this landmark work the role of priestly overseers in the lives of charismatic women has been a sticking point. New research in gender studies, however, by such scholars as Jodi Bilinkoff and John Coakley has focused precisely on these relationships and their epistolary and literary by-products, thus providing welcome nuance and invaluable context for my own investigations into visual representations.

Finally, art historians like my own dissertation advisor, Loren Partridge, have led the way with their inter-disciplinary, collaborative approach to the study of material culture in late medieval and Renaissance Italy, to which my own work is deeply indebted.

Contribution

Although deeply rooted in areas of current scholarly debate as presented above, *Painting in the Priest* nevertheless promises to break new ground. Historians like Daniel Bornstein have designated the parish priest “the great unknown of medieval history,” and he and others are working to fill that lacuna. Art historical research, however, has lagged. For example, existing research on episcopal imagery or papal portraiture has no counterpart in the realm of sacerdotal iconography. This lack of scholarship has even fostered an erroneous assumption in the field that little, significant priestly imagery even existed before the sixteenth century; yet *Painting in the Priest* identifies and thematizes an enormous body of sacerdotal depictions from the 13th- and 14th century, the majority of which adorn the pages of books reserved mainly for the clergy, like those I propose to have photographed. Small, conventional and seemingly static, these images have attracted little critical attention. Yet drawing on this supposedly unproblematic imagery, I pinpoint clerical and even explicitly sacerdotal images that begin to emerge by the early 15th century in which the previously anonymous, effaced figures of priests take on a new degree of agency. Depicted alongside representations of saints like Catherine of Siena, they frequently become bearers of additional levels of signification that deserve probing.

To ignore these earlier images of priestly figures risks falling into the historiographical trap of seeing all subsequent early modern Catholic culture through the prism of Reformation polemics. Rereading well-known, monumental, post-Tridentine images of priests-saints from a new perspective based on my analysis of earlier, pre-Reformation images is another critical contribution of my research. Sacerdotal subjects by artists like Peter Paul Rubens and Guercino need no longer be characterized primarily

as mere Catholic reaction to Protestant adversaries. By examining in their social context the late medieval precursors of this apparently triumphalist imagery, I reveal other cultural inflections of sacerdotal iconography that persist in subsequent centuries: popular anxiety over priests who doubt the Real Presence, concern about clerical comportment and the liturgical discipline of priests, and contentious debate over priestly prerogatives, especially access to the Eucharistic cup. Thus *Painting in the Priest* will associate for the first time a whole body of overtly sacerdotal rhetoric in general society—from anti-clerical screeds to extravagant paeans to sacerdotal dignity—with its contemporary innovations in iconography.

Cost

[The following are estimates of expenses for this project are based on current airfare prices and the presumption of relative stability in the US\$/EUR exchange rate.]

My proposed project calls for photography that can only be carried out in Italy. By overseeing arrangements myself, including the hiring of professional art photographers, I can substantially reduce the total cost of the project.

Identifying photographers in advance is extremely difficult from New York but a relatively simple matter once I am in Italy. Institutions like the Archivio dell'Opera Metropolitana di Siena, where many of the relevant manuscripts are housed, customarily have an in-house photographer or will provide a list of contract photographers.

Alternatively, I will seek out appropriate services with the help of the director of the Photographic Archive of the American Academy in Rome, Alessandra Capodiferro.

Calculating fees based on \$25/hour and 8 hours/day, for a minimum of 5 full days of work, the cost for the photographic services would be \$1000.

My per diem request for each of the cities I will visit is based on a reasonable expectation of low-cost lodging and board in Italian houses of my religious order (the Society of Jesus), except in Siena, where I will stay at the Alma Domus hotel.

Travel within Italy will consist of a single roundtrip by bus from Rome to Siena and a single roundtrip by train from Rome to Genoa. The remainder of my travel costs is based on an estimate of \$800 for roundtrip airfare NYC-Rome-NYC.

Conclusion

If awarded, a Faculty Research Grant would prove critical to the final *in situ* research and retention of photographic services that past advisors have said are the only steps remaining in my doctoral dissertation's journey of transformation into a promising book. In the coming weeks I will present *Painting in the Priest* to the following publishers: Yale University Press, Cambridge University Press, University of California Press and Saint Joseph's University Press. It is my intention to generate interest in anticipation of the book's completion by late 2010. I look forward to *Painting in the Priest's* publication and the realization of its potential to focus scholarly attention on a phenomenon too long overlooked by historians of both church and art: the emergence of a newly expressive sacerdotal iconography in Italy centuries before the Reformation, one exemplified in the evocative pairing of important late medieval female saints and mystics together with the lesser known male clerics who served them as chaplains, friends and, ultimately, defenders of their sanctity.