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Cliqués and cohesion is a graduate clinical psychology cohort: a longitudinal social network analysis

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This research is a product of the Doctor of Psychology (PsyD) program at George Fox University. Find out more about the program.

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Cliques and Cohesion in a Clinical Psychology Graduate Cohort:

A Longitudinal Social Network Analysis

by

Kimberley Annette Kunze

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Graduate Department of Clinical Psychology
George Fox University
in partial fulfillment
of the requirement for the degree of
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in Clinical Psychology

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Cliques and Cohesion in Clinical Psychology Graduate Cohort: A Longitudinal

Social Network Analysis

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has been approved

at the

Graduate School of Clinical Psychology

George Fox University

as a Dissertation for the PsyD degree

Approval

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Elizabeth Hamilton, PhD

Date: May 9, 2012
To date, no published research has utilized social network analysis (SNA) to analyze graduate cohorts in clinical psychology. The purpose of this research is to determine how issues of likability among students correlate with other measures, such as disclosure, health, spiritual maturity, help in projects, familiarity, and ease of providing feedback. The research also uses likeability to describe the relationships among members of the student cohort. A cohort of 23 first-year graduate students of clinical psychology at George Fox University’s Graduate Department of Clinical Psychology (GFU GDCP) participated in this study by responding to a survey where they rated each of their peers on the above-mentioned measures. The survey was administered 3 times during the academic school year. Results of the study show that the cohort remains relatively dense throughout the year. Clique counts are significantly low when compared to a randomized network of the same size. Key players and their degree centralization are analyzed to show the development of subgroups throughout the school year. The findings are discussed with regard to training issues and the usefulness of SNA in describing group processes.
Acknowledgements

No dissertation is complete without the careful assistance of a dissertation chair. I am very fortunate to have Dr. Gathercoal as my chair. She spent countless hours with me to untangle the programming language of a new (to us) statistical analysis tool. It was a blessing to not only receive her statistical help, but to be around Dr. Gathercoal is to be inspired by her. She’s a fantastic, thoughtful, and dynamic woman. My program and its students are lucky to have her.

Dr. Peterson has supported me as my faculty mentor for most of my graduate training. It has been an honor to learn from her, and words are not sufficient for expressing the impact she has had on my training and my life.

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I’m grateful to have such amazing women to look to as role models and mentors. While I will likely be on the other side of the country when I make my first steps as a licensed psychologist, their wisdom and example will surely influence me for the entirety of my career.

Additionally, and most importantly, I am thankful for my husband, Micah, who made dinners and cleaned house while I worked on this research. He’s truly an endless source of support for me, but I know that his support does not come from an endless supply of resources, so I am grateful for the physical, emotional, and mental sacrifices he has made while I not only completed this dissertation, but also worked to complete my doctorate. There’s a special place of honor for spouses, friends, and family who suffer alongside a graduate student.
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Chapter 1

Introduction

Social Network Analysis Terminology

The development of social network analysis (SNA) to assess relationships and social influence can be traced back to the work of Jacob Levi Moreno, a psychiatrist, who, in 1932 began a longitudinal study with the New York State Training School for Girls in which he measured the degrees to which each child was liked or disliked by peers to determine the child’s overall social standing within a group. This type of research was later called sociometry and the measures he used to assess the groups were called sociograms (Leung & Silberling, 2006). Soon, thereafter, the notion of studying the group as a whole appealed to a variety of disciplines. Today, SNA is seen as an interdisciplinary statistical analytic method, but no published research has been done utilizing SNA to describe the social structure of students in a graduate department of clinical psychology.

Since SNA is a unique, relatively novel, and fast-growing methodological discipline, it has adopted unique concepts and vocabulary to describe its functions and results. For instance, a node is an individual or social unit that is being observed in relation to the entire network. The data of interest in a social network analysis is gleaned from the linkages, or relational ties between actors in the overall network. Relational ties are created in a variety of ways. For example, a relational tie that will be observed in this study is the linkage that is created when one actor evaluates another person in the group (for example, rating his or her familiarity, likability, etc.) The most basic relational tie occurs when two actors become linked. This linkage is known
as a dyad. It must be remembered that it is the relational tie that provides data in SNA, not the effects or behavior of an individual. Dyads can be reciprocated or unreciprocated. Research has shown that unreciprocated relational ties correlate with the acquisition of negative health behaviors in adolescents, such as smoking or substance abuse. Such individuals were termed as “try-hards” because it appeared that bids for connection were denied within the social network (Abel, Plumridge, & Graham, 2002; Wasserman & Faust, 1994).

Larger subsets of relationships are generally the focus of SNA. The term social network is the finite group of actors and their identified relations. Relations are the set of relational ties that are the focus of a particular study (i.e., perceptions of likability in a graduate cohort). SNA can be used to describe results from individuals and their attributes.

Subgroups are “individuals who are tightly linked together and more or less clearly separated from others” (Freeman, 1988, p. 26). In SNA, they differ from cliques, which are defined as the maximum number of ties in a complete subgraph (Lusher, Robbins, & Kremer, 2010). Clique density is always 1.00, which means that every actor in the clique is connected to everyone else in the clique (Wasserman & Faust, 1994). However, it is not necessary for actors in a subgroup to be connected to everyone else in the group; relative density is the focus. It has been theorized that subgroups represent free and efficient dispersion of resources, ideas, and communication (Hanneman & Riddle, 2005).

This is, by no means, an exhaustive description of the jargon used in SNA. Wasserman and Faust’s seminal publication is an excellent resource for definition and specified mathematic computations involved in the broader SNA discipline. Carnegie Mellon’s Organizational Risk Assessment User’s Guide also provides a useful glossary of basic terms and provides instructions
on how to compute different measures with their tool (Carley, Reminga, Storrick, & Columbus, 2011; Wasserman & Faust, 1994).

**Social Network and Conventional Analysis**

Not only is there a unique jargon with which to understand and employ SNA, it is helpful to understand how SNA fits into the grander scheme of data analysis. Traditional research analysis focuses on actors and attributes while SNA focuses on actors and relations (Hanneman & Riddle, 2005). Butts provides a very helpful resource to understanding the differences between conventional statistical analysis and SNA. He states that once data is collected for a project of SNA design, the researcher chooses which elements of SNA he or she wants to attend to, based on the hypotheses and works to translate the usually overwhelming amount of diverse data into information that is readily understandable in the broader conventional analytic lens (Butts, 2008). Butts goes on to say:

Simple visualization of network data can be illuminating, but it is not sufficiently precise to serve as an adequate basis for scientific work. Rather, we require a means of specifying particular structural properties to be examined, quantifying those properties in a systematic way, and (ultimately) comparing those properties against some baseline model or null hypothesis. The oldest and most common paradigm for accomplishing these goals is what may be called the structural index approach. (p. 22)

The structural index approach is a way of organizing SNA interpretation to provide baselines with which to compare data output. The standard three groups of indices include node level, graph level and centralization level indices. Node level compares individual positions or actors with the rest of the network. Graph level indices describe the overall network
characteristics. Centralization level indices describe a group of SNA measures that describe the most central actors or groups within a network. The focus of this research looks at all three indices by comparing change in density over time (graph level), looking at the development of subgroups and cliques (centralization level), and analyzing “key players” in the networks and subgroups (node level; Butts, 2008).

Density is the ratio of actual connections to all possible connections. If everyone is connected within a network, the density is 1.00 (Warner, Bowers, & Dixon, 2012). High density is indicative of a network that efficiently and quickly shares resources and information (Reid & Smith, 2009). However, network density has been considered “the most primitive index of its form,” and simply knowing that there are connections between nodes misses some of the richness that SNA provides (Butts, 2008, p.28). Therefore this study focuses heavily on Total Degree Centrality, which is a node-level measure that shows which actors are most central, and theoretically, most powerful in their networks (Carley et al., 2011; Hanneman & Riddle, 2005). Finally, this study utilizes SNA language surrounding the development of cliques and subgroups and analyzes the development of such within the graduate cohort.

George Fox University Graduate Department of Clinical Psychology

George Fox University’s Graduate Department of Clinical Psychology (GFU GDCP) is an APA-accredited graduate training PsyD program in the Pacific Northwest. It is formed around Christian, and more specifically Quaker principles, and every student enters the program with the expectation and awareness that Christian integration classes are a large focus of the training. Generally, students complete their doctorates in a five-year time period, in which a Master of Arts in clinical psychology is earned in their second year. Incoming students hail from a variety
of regions. Cohort size usually hovers around 20 students whose ages range from the 20s to the 60s. Cultural diversity is growing within the program. Christian diversity is growing as well, as the program has enrolled students from Evangelical, Catholic, and Mormon affiliations.

The cohort is an important structure within the GFU GDCP program. Students generally proceed through classes with their cohort throughout their four years of academic training, but their interaction is never as intensive as it is during their first semester of enrollment. In the first semester of the first year of training, students usually have classes with their cohort, but are not interacting with the other academic organizations offered by the program. During the second semester, they are placed in Research Vertical Teams (RVT), which is an academic dissertation group composed of a faculty advisor and students from each of the first four cohorts. The process of ranking, selection, and placement of RVT choices tends to be a stressful time of competition within the cohort. Additionally, they are placed within Clinical Teams, which are similarly structured with a faculty mentor presiding over the group of 3-8 students from differing cohort levels. The focus of clinical team is case consultation, supervision, and mentoring. Finally, in the middle of Spring semester, all students within the program apply for available practicum positions. This introduces another potentially stressful facet of competition and uncertainty within the program, but seems to be especially intense for first-year students.

**Social Network Analysis in Literature**

Little research has been done employing SNA within academic programs, and no published work is available that utilizes SNA within a graduate program of clinical psychology. The potential information that can be gleaned from SNA is exceptionally rich for a field that relies heavily on networking, mentoring, collegial relationships, and interpersonal interaction.
Maroulis and Gomez (2008) performed SNA on a school district that was planning a reform in the high school system. They found density to be the most useful and efficient descriptor of the nature of student social networks. Their study showed high peer achievement (a student’s popularity and perceived trustworthiness) and academic success correlated with high density in the networks.

SNA has also been used within K-12 school settings to study the transmission of networked learning. Degree centrality was found to be a measure highly suitable for analyzing the effectiveness of networked learning. Therefore, having a significant number of students central to the networks facilitates the transmission of learning among the whole network. Practically, this means students are likely to know to whom they should go for study help and do so in a way that is beneficial to the overall network (Toikkanen & Lipponen, 2011).

Research in other organizations, such as within nursing staff of a large medical community, found other ways that behaviors of actors benefits the larger group (Van Beek, Wagner, Spreeuwenberg, Frijters, Ribbe, & Froenewegen, 2011). This study showed a strong correlation between advice exchange and overall job satisfaction. They also provided a compelling network visualization showing that communication was significantly weakened when the number of employees increased in care units.

Luque et al. (2010) completed a fascinating study that explored the utility of centrality data output when analyzing the key players in a large cancer treatment network in Florida. An excellent example of the consultative use of SNA, Luque et al. studied the network for a period of three years and effectively identified the strongest, most central actors within the network by the number of reciprocated linkages and the geographical distance between nodes.
Warner et al. (2012) provided a fascinating application of SNA, as they examined the team dynamic of a set of Division-I NCAA women’s basketball teams. They looked at density/cohesiveness by asking participants to rate each other in terms of friendship, trust, and advice-giving. Using UCINET, a popular SNA tool, they were able to compare these factors with overall season performance. They found that the team with the highest density in the trust component also had the highest performance. Interestingly, they found that higher density in friendship correlated with lower overall team performance (Warner et al., 2012).

Brewe, Kramer, and O’Brien (2009) investigated the density of a physics learning center network in a university setting. They found that the most central players were either strong academically or socially. They also found that centrality seemed to not be affected by gender or ethnicity, suggesting the community was inclusive regardless of differences.

Hypotheses

The focus of this research is to best describe the density, cliques, subgroups, and the most central actors within the network of a first-year graduate cohort within GFU GDCP. More importantly, these measures will be collected three times over the course of an academic school year to note changes in network structure and to see if events that occur during the Spring semester (i.e., RVT and practicum selection processes) have an exogenous effect on the structure of the network. That is to say that the stress of competition placed on the cohort by an outside source will change the processes within the group (McCulloh & Carley, 2011).

First, it was anticipated that ratings of likability among students would correlate with every other rating. This is based on the belief that we trust (disclose), work with (projects and help), and challenge (feedback) those whom we like. We also like those who are relatively
healthy and spiritually mature. Finally, we are familiar with those we like. Such an analysis will provide strength to the face validity and function of the survey administered.

Second, clique counts were taken of the network at three times during the first year. Special attention was given to any evidence of change (either increase or decrease of counts) between Time 1 and Time 2 with that of Time 3.

The overall density of the networks was expected to drop significantly during Time 3 due to the stressors mentioned above. The density measures during the other times are indicative of the process of entering into graduate school. It was expected that Time 1 would be moderately dense because most actors will be unfamiliar with one another. Time 2 was expected to be a time of significantly high density because it occurred right after the students completed their finals for the Fall semester and they had just completed a semester sharing most days of the week together in class and often in their leisure time. The stressors during the first semester, though challenging, usually bring a sense of solidarity to cohorts and the exogenous sources of competition are virtually nonexistent.

Subgroups were expected to develop throughout the administrations, but notable changes were expected to arise during the third administration. Transitions of the actors from one subgroup to the next will be acknowledged from both a statistical and clinical consultative sense, in which this researcher discussed the structure of sub-groupings with a faculty member who observed the cohort throughout the academic school year.

Finally, Total Degree Centrality was determined for the participants’ ratings of likability among the cohort. This identified the most central actors in the network and subgroups. AnSNA
graphic visualization of the centrality networks also sheds light on the density, number and direction of linkages among actors.
Chapter 2

Methods

Participants

The participants were members of a first-year cohort of 23 doctoral graduate students at GFU GDCP. Eight of these students were male and 15 female. Age range at the time of the first administration was 20-44 ($M=25.89$, Median= 24, $SD=5.56$). While not every student responded to the surveys, each student’s name remained on the survey. Of the individuals who responded to the survey, 12 described themselves as single, and never married; 1 as dating, never married; 2 as engaged, never married; and 4 as married. Of these respondents, 11 had bachelor’s degrees in a mental health subject, 4 had bachelor’s in other subjects, and 4 had master’s degrees in a mental health subject. Sixteen had no children, 2 had young children, and 1 had adolescent/young adult children. Eight participants claimed diversity status, while 15 did not.

Instruments

The Organizational Network Spreadsheet Utility. See Appendix A. This instrument was developed by Bruce Hoppe, PhD (2009) and Connective Associates as a free online customizable Excel spreadsheet designed specifically for the purpose of gathering data related to SNA. Participants were asked to select their name from a drop-down list and to confirm that they would like to participate in the study after review of the informed consent. Additional demographic information was requested that included age, marital status, highest degree completed upon admission to GFU GDCP, preferred theoretical orientation, parental status, and diversity status. The rest of the survey included a set of eight questions that corresponded with a
roster of names of members of the cohort. The participant was asked to respond to the questions based on a Likert scale of 0 to 4, where the following were indicated: 0= not at all, 1=more no than yes, 2=neutral, 3=more yes than no, 4=yes, very much.

The questions selected were based on a blend of inquiries that are of particular interest to academic development within a clinical psychology program and those that SNA would provide particularly robust information. The questions were as follows:

1. Disclosure: How comfortable would you be disclosing important personal information with this person?
2. Projects: How likely would you be to choose this person to be a part of your group for a class project?
3. Feedback: How comfortable would you be offering this person negative feedback about his/her participation in a group project?
4. Spiritual Maturity: How spiritually mature does this individual appear to be?
5. Help: I would go to this person for clarification on information I didn’t understand in class, and, in more cases than not, he or she could accurately explain.
6. Health: This person seems to be exhibiting emotional health that is within normal limits (he or she is functioning at a healthy level).
7. Likability: I am drawn to this person.
8. Familiarity: I know this person

The Organization Risk Assessment (ORA). This instrument is anSNA tool developed by Carnegie Mellon University’s Center for the Computational Analysis of Social and
Organization Systems (CASOS); it was used to analyze, visualize and interpret the data from this research (Carley, 2012).

**Procedure**

This study was approved by the University Human Subjects Research Committee prior to the initiation of the first administration; ethical guidelines established by the American Psychological Association were followed. Students were presented with this research study in their first week of school and were given a time to ask the principal researcher questions. After this, the survey was e-mailed to the members of the cohort. Embedded within the survey included informed consent stating that the students’ responses would be de-identified immediately upon receipt of their completed survey and only the principal researcher and the advising dissertation chair faculty member would have access to identifying information such as name, age, marital status, and so forth. The survey was administered in August, December, and May to track the development of the social network in the cohort. Each participant was asked to save his or her completed survey under his or her last name and to send it back to the principal researcher.
Chapter 3

Results

Descriptive Statistics

Table 1 shows the mean scores for the sample with regard to the eight questions on the survey at times 1, 2 and 3. An 8(questions) x 3 (times) repeated measures ANOVA showed that there was no main effect of time ($F(1.56, 31.12)=2.78, p = .09$), indicating that, overall, ratings were consistent across the three data-collection events. There was a main effect of question ($F(3.01, 360.21)= 69.80, p < .001$) and an interaction of time and question($F(6.85, 136.93)= 12.15, p< .001$), indicating that ratings differed systematically across questions and that some

Table 1

Means of all Responses for Each of the Eight Questions at Times 1, 2, and 3, Collapsed over Participants

<table>
<thead>
<tr>
<th>Question</th>
<th>Time 1 Mean</th>
<th>Time 1 SD</th>
<th>Time 2 Mean</th>
<th>Time 2 SD</th>
<th>Time 3 Mean</th>
<th>Time 3 SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Disclosure</td>
<td>2.06</td>
<td>1.28</td>
<td>2.27</td>
<td>1.28</td>
<td>2.16</td>
<td>1.31</td>
</tr>
<tr>
<td>2. Projects</td>
<td>2.82</td>
<td>1.25</td>
<td>2.71</td>
<td>1.25</td>
<td>2.54</td>
<td>1.36</td>
</tr>
<tr>
<td>3. Feedback</td>
<td>2.18</td>
<td>1.12</td>
<td>2.30</td>
<td>1.12</td>
<td>2.31</td>
<td>1.11</td>
</tr>
<tr>
<td>4. Spiritual Maturity</td>
<td>2.78</td>
<td>1.09</td>
<td>2.87</td>
<td>1.16</td>
<td>2.71</td>
<td>1.16</td>
</tr>
<tr>
<td>5. Help</td>
<td>2.82</td>
<td>1.17</td>
<td>2.95</td>
<td>1.24</td>
<td>2.75</td>
<td>1.27</td>
</tr>
<tr>
<td>6. Health</td>
<td>3.42</td>
<td>.95</td>
<td>3.39</td>
<td>.93</td>
<td>3.27</td>
<td>.98</td>
</tr>
<tr>
<td>7. Likability</td>
<td>2.81</td>
<td>1.25</td>
<td>2.90</td>
<td>1.22</td>
<td>2.84</td>
<td>1.23</td>
</tr>
<tr>
<td>8. Familiarity</td>
<td>1.84</td>
<td>1.09</td>
<td>2.33</td>
<td>1.10</td>
<td>2.29</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Note: Response range out of four.
questions changed differently over time than did others. Post hoc analyses are shown graphically in Figure 1 and indicated that ratings of health were significantly higher than for other questions across all three administrations and ratings of disclosure, feedback and familiarity were significantly lower. Otherwise, the responses are comparable to each other and remain steady across three administrations. The similarity of most ratings is likely caused by the option for students to choose a “2-neutral” response in the ratings. Perhaps forced choice would have causes more variability in scores.

![Figure 1](image_url)

*Figure 1.* The differences in ratings for the eight questions across three administrations. The groupings of questions show the main effect of questions in the ANOVA. The decrease in ratings for health(6) and projects (2), increase in ratings for familiarity (8), and stability of other questions shows the interaction of questions with time.
The mean scores of ratings each participant received are also provided in Tables 2, 3, and 4 for Times 1, 2, and 3, respectively. The mean of the students’ mean ratings is slightly positive ($M = 2.64, SD = .20$). The distribution of means is not skewed (skew = -.43, SE skew = .50).

Despite the overwhelming amount of data these tables provide, we can see that student G and L have the highest Likability means during Time 2 and Time 3. Likability scores are a main focus of this study. Later the centrality of the participants is provided and G and L are in the middle of this list. This is an example of how SNA can provide information that might be missed by conventional analysis alone.

**Likability**

As mentioned, Likability is a key focus of this study. It was hypothesized that the Likability question would correlate with all other questions. The Pearson correlation coefficient was calculated for the three administrations and is revealed in the three correlation matrices below. Data from Time 1 are shown in Table 5, Time 2 appear in Table 6, and Time 3 in Table 7. In Time 1, Likability correlated significantly with Disclosure, Projects, and Help. Time 2 showed significant correlations between Likability and Disclosure, Projects, Spiritual Maturity, and Help. Time 3 showed significant correlations between Disclosure, Projects, Spiritual Maturity, and Help. Overall, Projects and Disclosure seemed to consistently correlate highly with Likability.

**Clique Counts by Administration**

Cliques are defined in SNA as sub-structures in which every entity is connected to every other entity. The number of cliques in the target network were compared to a network of the same size created with randomized links in order to assess whether the number of cliques was significantly different than chance. First, the number of cliques was counted for the target
Table 2

The Mean Ratings of Each Participant on the Eight Questions at Time 1

<table>
<thead>
<tr>
<th></th>
<th>Disclosure</th>
<th>Projects</th>
<th>Feedback</th>
<th>Spiritual</th>
<th>Help</th>
<th>Health</th>
<th>Likability</th>
<th>Familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.37</td>
<td>3.37</td>
<td>2.47</td>
<td>3.00</td>
<td>3.26</td>
<td>3.47</td>
<td>3.26</td>
<td>2.16</td>
</tr>
<tr>
<td>B</td>
<td>2.21</td>
<td>2.89</td>
<td>2.47</td>
<td>2.95</td>
<td>2.84</td>
<td>3.47</td>
<td>2.84</td>
<td>2.26</td>
</tr>
<tr>
<td>C</td>
<td>2.16</td>
<td>2.58</td>
<td>2.26</td>
<td>3.05</td>
<td>2.84</td>
<td>3.47</td>
<td>2.47</td>
<td>1.84</td>
</tr>
<tr>
<td>D</td>
<td>1.89</td>
<td>2.68</td>
<td>2.42</td>
<td>3.32</td>
<td>3.05</td>
<td>3.58</td>
<td>2.79</td>
<td>1.84</td>
</tr>
<tr>
<td>E</td>
<td>2.63</td>
<td>3.05</td>
<td>2.00</td>
<td>2.32</td>
<td>2.84</td>
<td>3.37</td>
<td>3.21</td>
<td>2.32</td>
</tr>
<tr>
<td>F</td>
<td>1.95</td>
<td>2.95</td>
<td>2.21</td>
<td>2.74</td>
<td>3.05</td>
<td>3.37</td>
<td>3.16</td>
<td>1.84</td>
</tr>
<tr>
<td>G</td>
<td>2.47</td>
<td>3.26</td>
<td>2.16</td>
<td>2.74</td>
<td>3.05</td>
<td>3.53</td>
<td>3.26</td>
<td>1.89</td>
</tr>
<tr>
<td>H</td>
<td>1.47</td>
<td>2.16</td>
<td>1.89</td>
<td>2.21</td>
<td>2.61</td>
<td>3.33</td>
<td>2.21</td>
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network and for the randomized network. Next, the 95% confidence interval was determined for the target network. The number of cliques in the original network was determined to be
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Significantly different from chance if the clique count for the random network fell outside the 95% confidence interval of the target network.
The clique count on the *Likability* question for Time 1 was 2.27 out of a possible 36. The 95% confidence interval for the clique count in the *Likability* data at Time 1 ranged from 1.0-7.3.

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Table 5

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Social Network Analysis

Table 7

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<td>5. Help</td>
<td>.613</td>
<td>.785</td>
<td>.388</td>
<td>.575</td>
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<td>6. Health</td>
<td>.364</td>
<td>.479</td>
<td>.341</td>
<td>.533</td>
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<td>.450</td>
<td>.527</td>
<td>.690</td>
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<tr>
<td>8. Familiarity</td>
<td>.692</td>
<td>.528</td>
<td>.378</td>
<td>.461</td>
<td>.518</td>
<td>.381</td>
<td>.622</td>
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The randomized clique count, which is to say the clique count if all responses were a result of chance, was 21.14, which falls outside the 95% confidence interval. Therefore, the 2.27 cliques in the Likability network at Time 1 are unlikely to have occurred by chance. Similarly, the clique count on the Likability question for Administration 2 and 3 were 3.38 and 1.82, respectively, out of a possible 36. The 95% confidence interval for the clique count in the Likability data at both Time 2 and Time 3 ranged from 1.0-7.3. The randomized clique count was 21.14 for both times, which falls outside the 95% confidence interval. Therefore, the clique counts in the Likability network at Time 2 and 3 are unlikely to have occurred by chance.

Overall, these findings suggest that clique counts were significantly lower than expected. Colloquially, the cliques have negative connotations, but cliques as defined by SNA do not necessarily imply relational exclusivity, relational aggression, or snobbery. It was beyond the
scope of this research to examine the nature of the few cliques that developed, but doing so
would be an interesting option for future research.

**Density Comparison**

The density of a network is the number of actual connections between members divided
by the number of possible connections. Density values range from 0 to 1. This analysis was
based on responses to the *Likeability* question, thus higher density indicates a greater degree of
likeability among the members. The density, or cohesiveness, of the network was moderately
strong at .756 in Time 3. This differs only slightly from the density measure of Time 1 (.840),
and there was no change in density between Time 2 (.760) and Time 3 (.756). Alone, this
suggests that, despite the purported stress of the RVT and Practicum Selection processes,
students remained cohesive within this group. However, the slight drop in the density certainly
could be a result of the exogenous effects of the stressors. Additionally, the density of this cohort
suggests that the cohort structure and the GFU GDCP focus and value of cohort relationships
seems to be effective in creating cohesive environments.

**Subgroup Formation and Attribute of Likability**

SNA can be used to describe groups independent of individuals (agents) and their
attributes. Subgroups were identified based on Likeability responses from all three
administrations. Using Newman’s Clustering Algorithm function, Likability responses were
analyzed on an agent by agent basis. The union method was used to symmetrize the networks in
this study, which is necessary to run the Newman’s Clustering Algorithm function. Pendants and
isolates (i.e., people with few or no connections to others) were also removed.
The output for Time 1 is a fascinating glimpse into how the group was organized based upon first impressions, with the exception of two students who knew each other from undergraduate schooling. Consultation with a core faculty member and the chairperson associated with this research revealed that, though Time 1 is not rich or descriptive on its own, it provides a backdrop with which to compare the other Times. At Time 1, two subgroups emerged. One group ($n = 13$) was composed of participants H, D, M, C, O, L, B, U, Q, R, J, A, and I. The other group ($n = 8$) had students E, F, N, G, P, S, K, and T as members. Figure 2 shows the dendrogram, a graphic representation of these subgroups, at Time 1.

![Dendrogram](image.png)

*Figure 2. Dendrogram based on Likeability at Time 1.*
The subgroup analysis at Time 2 is interesting in that many of the students were in the same subgroup as classmates who also were part of their Clinical Foundations supervisory group. There were two subgroups at Time 2. The first \((n = 15)\) was composed of Students E, F, D, N, G, M, C, L, S, K, B, U, T, R, and Student J. The second group \((n = 6)\) was composed of Student H, O, P, Q, A, and Student I. The dendrogram at Time 2 appears in Figure 3. The Clinical Foundations class spans Fall and Spring semesters within the GFU GDCP. During the Fall, the students meet for lecture and a ‘laboratory’ in which they practice introductory clinical skills. They are divided into 4-6 groups that are overseen by the professor and a TA, who runs group supervision on a weekly to bi-weekly basis. In the Spring, the students take on 2-3 volunteer practice clients, videotape their sessions, and review those videos within their supervisory group. Because of these consistent small-group meetings it makes sense that many students form bonds that often last the entirety of their graduate career.

However, it is Time 3 that provided the most interesting and rich description of the formation of subgroups within the cohort. The dendrogram for Time 3 appears in Figure 4. In Time 3, a third subgroup emerges from the two, and a group of females of similar age and marital status form the 2\(^{nd}\) group \((n = 7; \text{Students E, G, M, L, S, B, and T})\). The first group \((n = 8; \text{Students F, O, P, U, Q, J, A, and I})\) seems to be composed of individuals who are older, married, and/or have children, and the last group \((n = 6; \text{Students H, D, N, C, K, and R})\) seems to be composed of individuals that, in many ways stand out as near-isolates. When the Algorithm was run to force the formation of 4, 5, or 6 groups, the members of the Group 3 peel off by themselves as groups of one person. An additional graphic (Figure 5), shows individuals’ movement across subgroups from Time 1 to Time 2 to Time 3.
Social Network Analysis

Figure 3. Dendrogram based on Likeability at Time 2.

Total Degree Centrality

Administration 3 was given during a time of notable stress and competition in the GFU GDCP; as mentioned earlier, students were vying for RVT and practicum positions. It is the first time that competition had been introduced by the structure of the program (of course, competition may naturally exist in a classroom level). The Total Degree Centrality of each student at Time 3 is shown in Table 8. This statistical measure reveals the ‘key players’ within a specified network or subgroup. These highly central individuals are theorized to be well-connected to the groups’ resources and information (Hanneman & Riddle, 2005). In business settings, these individuals are located to help maximize the efficiency of operations. In education, these individuals can be acknowledged to improve the overall acquisition and
employment of information and skills. For example, central individuals could be purposely spread among study or research groups to facilitate learning. They could be selected for student leadership or student council. Table 8 shows us that Students M, P, B, and K have significantly low degrees of Total Degree Centrality, indicating that they are on the periphery of the cohort. Overall, no student in this time period has a significant positive Total Degree Centrality, which supports the notion that this is a period of stress and diffusion among the cohort.

*Figure 4. Dendrogram based on Likeability at Time 3.*
Figure 5. The change in subgroup membership over time

Table 8

<table>
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<tr>
<th>Rank</th>
<th>Student</th>
<th>Scaled Centrality</th>
<th>Unscaled Centrality</th>
<th>Context*</th>
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<td>2</td>
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<td>115.000</td>
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<td>F</td>
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<td>5</td>
<td>L</td>
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<td>103.000</td>
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<td>G</td>
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<td>10</td>
<td>M</td>
<td>0.535</td>
<td>92.000</td>
<td>-2.418</td>
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Note: Number of SDs from the mean of a random network of the same size and density.
Link Analysis Diagrams

An additional aspect of SNA is its unique graphic depictions of the social structure. Circles (called nodes) represent students. The lines (called links) represent connections among people. The arrowheads show the direction of the relationship, and so forth, the less-liked person points to the more-liked person. Links with two arrowheads indicate people who match each other equally in likeability rating.

The cohort is graphically depicted in Figures 6, 7, 8, and 9. Figure 6 shows the overall direction of links regarding responses on the Likability question. Then, because the subgroups are particularly telling of this cohort for Time 3, the subgroups were graphically depicted individually in the figures 7, 8, and 9.
According to Table 8 and Figure 6, Student U is the most central in Time 3 on the question of Likability. The more central the node is in Figure 6, the higher the Total Degree of Centrality. The arrows indicate the direction of the connection. For Student U, several links are bidirectional, or reciprocal. However, Students N and D have no incoming arrows, suggesting that they were not ‘relatively’ liked among this group during this administration. Student C has several incoming links, but only half of these are reciprocated.

Figures 7, 8, and 9 represent the networks of the three subgroups from Time 3 on the Likability question. It is much easier to see the direction of the links with fewer nodes, which offers a rich depiction of the network ties in each subgroup. In Figure 7, the links are noticeably reciprocal with the exception of Student J, who receives only one reciprocated connection with

*Figure 6. Link Analysis showing the structure of the cohort based on Likeability at Time 3.*
Student Q out of the four possible links that he or she has. Student F and Student U have six incoming links, but Student U reciprocates more of those connections.

Figure 7. Likability T3, subgroup A, removed links < 2, with arrowheads.

Figure 8 has the most clinical significance of the three Figures. This group of female individuals almost reaches SNA clique status. Only one connection between nodes is not reciprocated. The node at the center of the Figure has the highest Total Degree of Centrality in this subgroup and the fourth highest Total Degree of Centrality overall in the Time 3 Likability administration.

The faculty member who chaired this research also worked with the cohort during their Spring semester (after which Time 3 was administered) and stated that Subgroup B was often seen sitting together at worktables, during lunch, and in their free time while in the GFU GDCP building. In order to maintain confidentiality, details of the group will be omitted except to say
that this group was composed entirely of females within the same age group and they had similar marital and parent statuses.

Figure 8. Likability T3, subgroup B, removed links < 2, with arrowheads.

Figure 9 also holds clinical significance in that it was observed that this group of students seemed to be a “grab-bag” of students who did not naturally fit with either of the first two subgroups. When the Newman’s Clustering Algorithm was forced to create 4 or more groups, student in Subgroup 3 began to isolate, and so forth, each moved into their own subgroup, suggesting that their bonds are neither strong nor particularly central. Figure 9 captures a weak subgroup formation in which several links are not reciprocated and where there are few links between nodes overall. Student R is most central in this subgroup because he or she has several incoming and a few outgoing connections with other nodes. The purpose of this study was not to determine why members did or did not fit to protect the identities of students. However, such
information could be used from consenting participants to determine reasons why subjects like Student N have no incoming links.

*Figure 9. Likability T3, subgroup C, removed links < 2, with arrowheads.*
Chapter 4

Discussion

Summary of Findings

The first hypothesis aimed to address whether or not the Likability question correlated well with the other measures. Overall, Projects and Disclosure seemed to consistently correlate highly with Likability. The second hypothesis sought to determine the number of cliques in the cohort over the year. Interestingly, the cohort had statistically significant low clique counts (between 2 and 4 cliques). Thirdly, this study looked at the development and nature of subgroups based on the Likability measure. Time 2 was interesting in that many students joined a subgroup with those who were also part of their Clinical Foundations TA group. Time 3 saw the development of a third subgroup and the groups seemed to be oriented by age, gender, marital status, and parental status. The third group was notably weak in their linkages with one another. The second group was notably dense and reciprocating in linkages among nodes. Finally, Students M, P, B, and K had significantly low degrees of Total Degree Centrality. No student in Time 3 had a significant Total Degree Centrality, supporting the notion that Time 3 was a period of stress and diffusion among the cohort.

Usefulness of SNA

Another purpose of this study was to assess the potential utility of SNA in graduate training programs for clinical psychology. Theoretically, the implications of the study of SNA include the ability to provide quantitative language for group theoretical notions. For education and pedagogy, SNA would be an effective application for comparison of how cohorts differ from
one another. A fascinating notion, popular in SNA, is that of studying contagion of behavior and knowledge among nodes. Such a notion would be very useful for instructors and administrators wishing to determine how to best facilitate the learning and environment of their institutions. For clinical psychology graduate programs, an interesting study would be to compare cohesive cohorts such as the one in this study with those that do not have a cohort model.

It is important to note the, in many ways, the researcher’s intuition and knowledge of the group being studied is essential to tailor meaningful SNA output (Warner et al., 2012). Here, intuition refers to the researcher’s ability to apply foreknowledge of the group being studied and group theory to interpretation of SNA results. Most notably for this study, intuition was used in evaluating the subgroup solutions that were yielded by the Newman’s Clustering Algorithm. As mentioned above, Total Degree Centrality for Time 3 was forced into three subgroups because any fewer did not capture the definition of clusters within the cohort and any more caused the peeling off of the less central nodes. Such a process is likened to conventional factor analysis procedures.

Understandably, use of intuition might raise concern and questions about the trustworthiness of overall SNA output. SNA’s relative novelty to the statistical field predisposes it for misuse. Therefore, the use of conventional statistical analysis, such as correlations, ANOVA, and confidence intervals provide benchmarks with which to anchor the data and to provide overall integrity to the analysis. For this reason, many studies use a blend of SNA and conventional analysis.

On a similar note, the other results of this particular study did little to inform the impression the researcher had of the group’s structure. This raises the question as to whether or
not SNA is a worthwhile tool to learn. This researcher had regular interactions with the cohort studied, but individuals wishing to study groups and networks from afar, or groups much larger and broader in scope, could use the descriptive output of SNA to grasp the key players and many other facets of the group. Use of intuition to tailor or sharpen results would be diminished in this case, but output such as centrality, density, and betweenness are all viable results that could be gathered without familiarity with the network.

Limitations

Judgment of peers was uncomfortable for the participants in this study. Several students wanted assurance that their responses would remain confidential and stated that they felt uncomfortable with questions related to health and spiritual maturity of their peers. This is a common criticism of sociograms, in which parents, students, and educators felt markedly uncomfortable asking and reporting which students were most and least liked (Leung & Silberling, 2006). Removal of such judgment-based questions would have made the survey easier to complete and would not have detracted from the overall results.

Another limitation of this study included the excess in number of questions. Most SNA studies ask one to four questions of the participants, while this study asked eight questions of the participants. Additionally, forced choice responses might have sharpened the results of the study, where many participants relied on the “neutral” option to a fault, especially in questions of judgment.

Suggestions for Future research

Future research could focus on comparing the relationship of the Projects question with the other questions and demographics. It would be interesting to see which students chose to
work with one another and why. Additionally, it would be interesting to continue following this cohort throughout their training. Comparison with other cohorts within the program might yield interesting results, as well.

Otherwise, SNA is popularly used to determine contagion of behavior and knowledge within groups. Clinical psychology is a field in which professionals rely heavily on networking for success, information and support. It would be interesting to learn how information spreads within training models.

Another useful implication for SNA within the field of psychology would be in the growing field of integrated behavioral healthcare within medical systems. Psychology and other health fields have been invited into the primary healthcare in recent years to provide holistic care to patients. However, it can be quite a challenge to integrate mental health into a physical health facility. Many psychologists have even made careers of consulting with primary care facilities to help implement behavioral health into the overall system. SNA would be an excellent way to determine the key players within a clinic to promote the inclusion of behavioral health into the facility. Research has already been using SNA to determine communication patterns in medical facilities, but not on those that have behavioral healthcare (Scott et al., 2005).

Finally, SNA would be an effective tool to understand the progress of therapy groups and the effectiveness of the group leader. Key players, trust, efficiency, and reciprocity are important aspects of group therapy. Keeping in mind that SNA questionnaires can be uncomfortable for participants to complete.

The possibilities of SNA are endless, but it is certainly a difficult tool to comprehend. Its utility might not feel worthwhile for the individual research opportunity, but usage becomes
easier and more automatic with practice. Furthermore, it seems that the field of SNA is growing quickly and with it, its familiarity and efficiency. Eventually, SNA will likely be less cryptic and it will continue to find its niche and place in or alongside conventional analysis. For the field of psychology and training, SNA also has a variety of applications. The key will be to find a way to make its concepts more accessible and understandable to those familiar with conventional data analysis.
References


Appendix A

Organizational Network Survey
Organizational Network Survey

Being part of a cohort is a powerful experience that can be strongly influential to your professional development as a psychologist. As your cohort progresses through the GDCP program at George Fox, you will probably recognize changes in your impressions of one another. Periodically through the next 2 years, you will be asked to complete this survey to track the development of relationships among your cohort.

Opting Out: You are not required to complete this survey, but the benefits of participating in this include the ability to track your own interpersonal development within your cohort, direction of growth among individuals of your cohort, and the influence of maintaining emotional and spiritual health throughout your career at the George Fox GDCP.

Limit to Confidentiality: As you can see, you will be submitting your name with this survey. Everyone will be asked to provide a personal identification number that you can remember for two years. When data is analyzed, only the personal identification numbers will be presented. Only the researchers involved in the project will be able to connect your name with your responses. The researchers include Kimberly Kuron, M.A. and Kathleen Guthrie, Ph.D. Neither researcher will use your responses in a manner that will compromise your interpersonal and educational security within the program.

Electronic Informed Consent: Selecting “Yes” in the second drop-down box will indicate that you understand and accept the implications of this study and provide your consent for the researchers to use your responses as data for the complete project.

Select your name from the drop-down list: [Dropdown List]

Would you like to participate in this survey? (Yes or No):
[Dropdown List]

If you answered “No” above, please return this survey as-is so that we can ensure you do not appear in the network map. Otherwise, please complete the rest of the survey:

Select your age from the drop-down list:
[Dropdown List]

Select your marital status from the drop-down list:
[Dropdown List]

Highest degree completed upon admission to GDCP:
[Dropdown List]

Select your preferred theoretical orientation:
[Dropdown List]

Select your parental status from the drop-down list:
[Dropdown List]

Do you claim diversity status? (Yes or No):
[Dropdown List]

The last names of the 2010 cohort are listed below. Please answer each question for each person on the list:

1. Disclosure: How comfortable would you be disclosing important personal information with this person?
2. Projects: How likely would you be to choose this person to be a part of your group for a class project?
3. Feedback: How comfortable would you be offering this person negative feedback about his/her participation in a group project?
4. Spiritual Maturity: How spiritually mature does this individual appear to be?
5. Help: I would go to this person for clarification on information I didn’t understand in class, and, in more cases than not, he or she could accurately explain it to me.
6. Health: This person seems to be exhibiting emotional health that is within normal limits (he or she is functioning at a healthy level).
7. Likeability: I am drawn to this person.
8. Familiarity: I know this person.

Answer each question on a scale from 0 to 4:
(0) Not at all, (1) More no than yes, (3) More yes than no, (4) Yes, very much

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Appendix B

Curriculum Vitae
EDUCATION

8.2007 to present  George Fox University
Graduate Department of Clinical Psychology
APA Approved
Newberg, OR
(M.A. earned May, 2009)
(Psy. D. anticipated 2013)

8.2003 to 5.2007  Huntington University
Huntington, IN
Bachelor of Arts, Psychology
Graduated Cum Laude

AWARDS
8.2003 to 8.2004  **Mental Health Field Scholarship**

_Awarded for an outstanding graduate seeking advanced education in the mental health field._

Awarded by the Northeastern Community Health Center

Kendallville, IN

·SUPERVISED CLINICAL EXPERIENCE·

7.2011 to present  **Program Evaluation Research Consultant**

St. Charles Health Center

Bend, OR

- Scored and analyzed Outcome Rating Scales and Session Rating Scales from BHC sessions with patients from three rural primary care clinics
- Will use this data as feedback about the efficacy of treatment and to compare with previous study of similar design with patients from metropolitan medical group near Portland, OR

Supervisor: Mary Peterson, Ph.D., ABPP/CL

Direct Contact Hours to November, 2011: 72

5.2011 to present  **Behavioral Health Clinic Manager**

Oregon Health and Science University
Family Medical Center at Richmond
Portland, OR

• Trained incoming behavioral health consultants
• Assign patients to behavioral health consultants
• Work with clinic social workers, head clinic manager, and administrative staff regarding scheduling needs and changes
• Active in training of behavioral health consultants during transition to billing for BH services in Fall, 2011.

Supervisor: Tamera Hoogestraat, Psy.D., M.B.A.

6.2010 to present

**Behavioral Health Consultant**

Oregon Health and Science University

Family Medical Center at Richmond

Portland, OR

• Provide long and short-term therapy for low-income, uninsured patients from diverse backgrounds
• Administer integrated cognitive and neurological assessments for clinic patients
• Provide integrated health care, including reception of ‘warm-hand-offs’ from primary care providers
• Regular consultation/ ‘curb-side consult’ with interdisciplinary team, including MD’s, FNP’s, RN’s, MA’s, LCSW’s, and Psy. D.’s
• Provide group therapy experiences for low-income, uninsured patients

• Participate in hospital-wide IMPACT program, which analyzed changes in depression levels after providing problem-solving therapeutic techniques to participants

• Provide consultation seminar for clinic employees regarding workplace stress management

Supervisor: Tamera Hoogestraat, Psy.D, M.B.A.

Direct Client Contact Hours to November, 2011: 939

8.2009 to 6.2010

**Portland State University**

Student Health and Counseling Center

Portland, OR

• Provided comprehensive assessments for students seeking school-based accommodations for diagnoses of specific learning disabilities and/or Attention Deficit Hyperactivity Disorder

• Worked in integrated health facility for students consisting of psychologists, psychiatrists, RN’s, FNP’s, MA’s, professors, and administrative staff

• Received weekly supervision: individual and group

• Supervisors: Jennifer Dahlin, Psy. D. and Karen Ledbetter, Ph. D.

Direct Client Contact Hours: 154
Milwaukie and Wichita, OR

- Provided therapy, group therapy, assessment, IEP evaluations, and parent and teacher consultation for students in Seth-Lewelling Elementary, Wichita Elementary, Ardenwald Elementary, and Milwaukie High School

- Title 1 School District

- Worked with several students with Pervasive Developmental Disorders

- Received weekly supervision: individual and group

- Participated in weekly clinical oversight team meetings

Supervisors: Leslie Franklin, Psy. D. & Fiorella Kassab, Ph. D.

**Direct Client Contact Hours:** 437

1.2008 to 4.2008  **George Fox University Graduate Department of Clinical Psychology**  
Newberg, OR

- Provided therapy for college students

- Reviewed 30+ hours of recorded therapy sessions in individual and group supervision settings

- Received weekly supervision: individual and group

- Participated in weekly clinical oversight team meetings

Supervisor: Mary Peterson, Ph.D., ABPP/CL
Direct Client Contact Hours: 52

·SUPERVISION OF OTHER STUDENTS·

8.2010 to present  Supervision of Other Students

- Provided weekly group and individual peer supervision for three second-year graduate students and 9 first-year students
- 3 of these students had practica in K-12 school settings
- 9 of these students had practica in University Counseling Centers
- Received supervision on how to learn and implement supervision techniques

Supervising professors: Mary Peterson, Ph.D., ABPP/CL & Rodger Bufford, Ph.D.

Direct Contact Hours to November, 2011: 146

·RELEVANT TEACHING AND PRESENTATION EXPERIENCE·

5.31.11  “Stress management for health care workers”


Oregon Health and Science University- Richmond Family Medicine, Portland, OR
Facilitated stress management workshop for employees of OHSU Richmond Clinic. Discussed assertive communication, mindfulness techniques, and boundary maintenance.

4.11.11

“Self-Injury: Diagnosis and Treatment in Primary Care Settings”
Kimberley A. Kunze, M.A.
Oregon Health and Science University - Richmond Family Medicine, Portland, OR
Presented proposed diagnostic hallmarks of self-injurious behavior for upcoming DSM-V to clinic’s behavioral health team and provided relevant clinical research pertaining to treatment of self-injurious behavior in a primary care setting.

10.29.10

“History of Psychoanalysis: Individual and historical context”
Guest Lecturer
History and Systems of Psychology - Graduate Course
George Fox University
Graduate Department of Clinical Psychology
Supervising professor: Kathleen Gathercoal, Ph.D.

8.2010 to present

Clinical Foundations Teacher Assistant

• Reviewed weekly tapes of students’ therapy sessions
Social Network Analysis

- Graded assignments, reports, and exams to assist course director
- Audited students’ charting of sessions
- Worked with various online data storage systems for confidential transmission of therapy videos
- Taught lectures for Clinical Foundations class on expression of empathy to clients

Supervising professor: Mary Peterson, Ph.D., ABPP/CL

4.2010 to present  **Teacher’s Assistant**

General TA assisting Director of Clinical Training

- Organized evaluation data from students, supervisors, and faculty
- Compiled Health Psychology Handbook from available resources
- Organization and review of competency protocol and procedures

Supervising professor: Mary Peterson, Ph.D., ABPP/CL

4.21.2010  **“Cognitive Behavior Therapy Essentials”**

Guest Lecturer

Introduction to Psychology- undergraduate course;

George Fox University

Supervising professor: Kelly Chang, Ph.D.

4.20.2010  **“Abnormal Psychology and Clinical Applications”**
Guest Lecturer
Abnormal Psychology - undergraduate course
George Fox University
Supervising professor: Kristina Kays, Ph.D.

8.2009 to 12. 2009  **Teacher’s Assistant for Psychopathology - Graduate Course**
Graded assignments based on the development of Axis I-V diagnoses
Created electronic copies of course materials
Received weekly mentoring with course professor on best ways to give
students feedback
George Fox Department of Clinical Psychology
Supervisor: Nancy Thurston, Psy.D.

8. 2009 to 12. 2009  **Graduate Assistant for Advanced Counseling -**
**Undergraduate Course**
Co-facilitated small group application of basic counseling techniques with
advanced-level undergraduate psychology students
George Fox University
Supervisor: Kristina Kays, Psy.D.

·RELEVANT WORK EXPERIENCE·
8.2005 to 5.2007  **Resident Assistant**

Huntington University

Huntington, IN

- Supervised and organized activities and educational experiences for a total of 80+ female college students
- Had exposure to: crisis management, suicide intervention, suicide risk-assessment and addictions risk-assessment
- Worked with individuals struggling with suicidal ideation, self-injurious behavior, learning disabilities, phase-of-life adjustment, grief, addictions, depression, and anxiety
- Had intensive interaction with and exposure to individuals diagnosed with Axis II personality disorders
- Had extensive involvement with campus minority groups; particularly with individuals from Honduras, Jamaica, and China
- Organized information workshops to help students develop stronger interpersonal skills and interpersonal conflict management tactics

Supervisor: Alison Sharpe, Resident Director, Huntington University

5.2003 to 8.2003  **Kendallville Youth Center (“The Wreck”) Summer Intern**

“The Wreck” Youth Center

Kendallville, IN
• Coordinated various summer activities and workshops for community youth

• Involved in student/parent consultation for students struggling in a variety of social and psychological spheres

• Involved in financial planning, budgeting and grant-writing

• Mentored several adolescents through college-application processes (i.e., initial university applications, loan and FAFSA procedures, phase-of-life changes, and etc.)

Supervisor: Cheri King, M.A., Director

• PROFESSIONAL AFFILIATIONS:

  2011 to present  International Association for Relational Psychoanalysis and Psychotherapy, Student Affiliate

  2009 to present  Western Psychological Association, Student Affiliate

  2008 to present  Oregon Psychological Association, Student Affiliate

  2007 to present  American Psychological Association, Student Affiliate
• RESEARCH EXPERIENCE •

**Dissertation:** “Social Network Analysis of Cohort in Graduate Department of Clinical Psychology?”

**Status:** Preliminary Proposal Passed Fall, 2009; Data Collection Completed Summer, 2011;
Final Defense Scheduled for Spring, 2012

**Chair:** Kathleen Gathercoal, Ph.D.

**Description:** The purpose of this study is to employ the use of social network statistical analysis to analyze the relationship development among students in their first year of graduate school in a clinical psychology program in Newberg, OR. It is hypothesized that alliances will ebb and flow according to the influence of first impressions, common interest and the external pressures from the program at large. Students who do not find success in forming initial alliances will ‘accommodate’ their behaviors and interests to fit in with other cohort mates.

2012 Comparing Outcome Rating Scales (ORS) and Session Rating Scales (SRS) data between urban and rural primary care settings

*Anticipated submission to APA annual conference 2013.*

Kunze, K.A., Foster, L., Ackerman, C., Hottenstein, J., Gann, J., G Gathercoal, K. (2012, August). Gender predictability in curricula vitae of graduate students in a clinical psychology program. Poster
presentation to Division 2 at the American Psychological Annual Convention, Orlando, FL.


**RELEVANT PRESENTATIONS, COLLOQUIA, AND CONFERENCES ATTENDED**

2011 Certificate Program in Integrated Primary Care

20-week program emphasizing the pedagogy and development of clinical skills for professionals interested in working in integrated primary care settings.

Hunter Hansen, Psy.D.

Neftali Serrano, Psy.D.

Robert McGrath, Ph.D.

Fairleigh-Dickinson University

Summer-Fall, 2011
2011  Suicide Risk Assessment
       Robert Tell, LCSW
       Amy Guffey, LCSW
       Department of Veteran Affairs
       Oregon Health and Science University
       Portland, OR
       May 16, 2011

2010  Best practices in multi-cultural assessment
       Eleanor Gil-Kashiwabara, Ph.D.
       George Fox University
       October 27, 2010

2010  Primary Care Behavioral Health: Where Body, Mind (& Spirit) Meet
       Neftali Serrano, Ph.D.
       George Fox University
       October 6, 2010

2010  Current Guidelines for Working with Gay, Lesbian, and Bisexual Clients:
The New APA Practice Guidelines
       Carol Carver, Ph.D.
       George Fox University
2010  Methods of Hormonal Gender Reassignment and Outcomes in 748 Transsexuals
Sara C. Becker, M. D.
Portland Psychological Association
February 18, 2010

2009  Multi-cultural counseling: An alternative conceptualization
Carlos Taloyo, Ph. D.
George Fox University
September 23, 2009

2009  APPIC Conference
Portland, OR
April 16-18
Student volunteer

2009  Opening Gambits
Peter Armstrong, Ph. D.
Portland Psychological Association
March, 12, 2009
2008 2008 Annual Northwest Assessment Conference: *WAIS-IV: An Overview and Assessment of ADHD in Children, Teens and Adult*
George Fox University

2007 Assessment of Risk
Alex Milkey, Ph.D.
Elena Balduzzi, Ph.D.
Dan Smith, Ph.D.
November 13, 2007

2007 Counseling Adolescents
Indiana Wesleyan University Counseling Program
Supervisor: Steve Lee, Ed.D.

· UNIVERSITY INVOLVEMENT ·

2011- present **Gender Studies Committee**
George Fox Department of Clinical Psychology
Committee Founder
Explored cutting-edge research related to gender issues (male,
female, transgender) and engaged in research focused on the analysis of gender-related issues found in graduate student curriculum vitaes. Data from this project is being collected with the intent to submit for professional presentation.

Supervisor: Kathleen Gathercoal, Ph.D.

2010-2011  
**Student Council Executive Committee Member: Secretary**

George Fox Department of Clinical Psychology

2009-2011  
**Student Council Cohort Representative**

George Fox Department of Clinical Psychology

2009-2010  
**Practicum Revision Committee**

Student representative elected to work with DCT in the revision of practicum selection protocol

George Fox Department of Clinical Psychology

Supervisor: Mary Peterson, Ph.D., ABPP/CL

2009-2011  
**Multicultural Committee**

George Fox Department of Clinical Psychology

Student Council Representative

Supervisor: Winston Seegobin, Ph.D.
2009-2010  **Community Care Committee**
George Fox Department of Clinical Psychology
Supervisor: Nancy Thurston, Psy. D.

2008-2009  **Mentor for first-year graduate student**
George Fox University
Graduate Department of Clinical Psychology

2008  **CAPS Conference**
Phoenix, AZ
Student volunteer presenting information poster for George Fox University Graduate Department of Clinical Psychology
Supervisor: Rodger Bufford, PhD

**VOLUNTEER EXPERIENCE**

2.2010 to 5.2011  **Newberg Alternative School**
Volunteer Tutor and Mentor
4-8 hours/week tutoring and mentoring students enrolled in an alternative/magnet school program for the Newberg School District, Newberg, OR
2001 to 2006

**Kendallville Youth Center ("The Wreck") Volunteer and Board Member**

- Involved in the early stages of developing a vacant salvage yard into a youth center
- Participated in several grant-writing processes to receive funding for youth center
- Supervised and volunteered at various events and activities
- Interacted with adolescents and families from a variety of minority and differing SES backgrounds
- Had exposure to mentoring and working with students struggling with suicidal ideation, eating disorders, oppositional defiant/antisocial behaviors, learning disabilities, addictions, phase-of-life struggles, grief, and interpersonal problems
- Consulted with area businesses, churches and schools regarding needs of families and children in the community

Supervisor: Cheri King, M.A., Director

· **RELEVANT COURSEWORK, GRADUATE-LEVEL**

2007- present
• 14 credit hours of practicum training (including: weekly didactic trainings, clinical colloquiums, grand rounds, and weekly clinical team meetings with peers and a licensed psychologist)

• Behavioral Intervention

• Biological Basis of Behavior

• Principals of Consultation

• Clinical Foundations of Psychotherapy

• Cognitive Assessment

• Cognitive Behavioral Psychotherapy

• Dissertation Preparation

• Ethics for Psychologists

• Fundamentals of Shame Theory

• Group Psychotherapy

• Health Psychology

• History and Systems of Psychology

• Human Development

• Integrative Approaches to Psychotherapy

• Integrative Behavioral Healthcare in Psychology- Independent Study

• Interpersonal Psychotherapy

• Learning and Cognition

• Marriage and Family Therapy

• Object Relations Therapy
- Personality Assessment
- Projective Assessment
- Professional Issues in Psychology
- Primary Care Independent Study
- Psychodynamic Theory and Practice
- Psychometrics
- Psychopathology
- Psychopharmacology
- Research Methods
- Social Psychology
- Statistics
- Supervision and Management
- Theories of Personality/Psychotherapy

**REFERENCES**

Available upon request.