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Introducing Jesus's Social Network: Support, Conflict, and Compassion

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ABSTRACT

This study combines the growing field of social network analysis with religious history and biblical studies in order to examine Jesus' social network. Using social network analysis allows this study to understand and depict patterns of interactions, the social structure, and the social dynamics surrounding Jesus' life and ministry. This study focuses on Jesus' interactions with three categories of people—his family and followers, the civil and religious authorities, and stigmatized people. Data were coded from the interactions recorded in the Gospels of the New Testament, and social network analyses describe Jesus' network, examine patterns of positive and negative ties, and identify central figures. Based on the results, this study argues that: (1) Jesus' interactions with his family and followers were characterized by support; (2) his interactions with the civil and religious authorities were characterized by conflict; (3) his interactions with stigmatized people were characterized by compassion.

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INTRODUCTION

Jesus is an important religious figure and charismatic leader (Bowker 2006; Collins 2015). Many scholars have examined his life and ministry, his teachings, his miracles, and the social context of his ministry (e.g., Kaltenback 1956; Riches 1990; Stein 1994; White 2004; Bowker 2006; Cotter 2010). While a recent sociological study discusses how Jesus's interactions and conversations illustrate his charismatic authority (Collins 2015), there are still many things about Jesus's life and ministry that social scientists have not yet investigated. This article contributes to this research on Jesus by examining his ties and interactions using social network analysis, a growing field and "hot topic" in sociology (Felmlee and Faris 2013:440).

When considering social networks, many people think of social media websites and applications, like Facebook and Twitter; social network data, however, more generally consist of information on nodes (usually people) and the ties (interactions or relationships) among the nodes (Felmlee and Faris 2013:439-440). This study is not the first to apply social network analysis to a religious topic. A recent article by Sean Everton reviews research on social networks and religion and argues that social networks play an important role in shaping religious life (2015). Using social network analysis to study Jesus's interactions, as they are recorded in the four Gospels, provides a unique opportunity to quantitatively analyze the interactions of people within Jesus's social network, to examine the broader structure of his social network, and to visually depict the people and relationships that comprise his social network (Felmlee and Faris 2013:440-441). In short, it allows this article to analyze the social dynamics surrounding Jesus's life and ministry.

Before proceeding to the analyses, this section provides an overview of the social, political, and religious context of first century Palestine, describes three important categories of people with whom Jesus interacts—(1) his family and followers, (2) the civil and religious authorities, and (3) stigmatized people—and presents the research questions for this study.

The Social, Political, and Religious Context of First Century Palestine

In the first century CE, Palestinian Jewish leaders and people found themselves in a difficult situation. Palestine, the land of the Jewish people, was under Roman control (Riches 1990:10; Jeffers 1999). There were also conflicts among Jewish religious authorities. Many of the leading Jewish rulers were Sadducees, and they focused on worship and religious rituals in the Temple (Riches 1990:59; Sakenfeld et al. 2009b:35). Another group of religious authorities, the Pharisees, probably taught in the synagogues, had more contact with the common people, and strongly emphasized keeping the law and ritual purity (Riches 1990:60-61). The Sadducees and Pharisees often disagreed over how to interpret and apply the Jewish law (Riches 1990:59, 71; Sakenfeld et al. 2009b:33).

There were a number of salient social divisions in first century Palestine, and many Jewish people perceived divisions between themselves and two groups—Gentiles and Samaritans (Riches 1990:17). Many Jewish people distanced themselves from Gentiles, or non-Jewish people. They thought that Gentiles were not part of God's covenant with the Jewish people and, thus, not part of God's chosen people (Riches 1990: 32-33, 60), even

though some Jewish prophecy foresaw Gentiles turning to God (Riches 1990:66; see Isaiah 60). There was also antagonism between many Jewish and Samaritan people (Riches 1990:17-18). Some Jewish people viewed Samaritans as part Jewish and part Assyrian and considered them to be not fully Jewish, even though they shared many religious traditions, rituals and beliefs (Knoppers 2013). There was so much social distance between Jewish people and Samaritans that Jewish people were said to have "no dealings with Samaritans" (John 4:9; Knoppers 2013:1).

Social change and upheaval also characterized this period in Palestine. There was substantial urban migration, with the civil authorities sometimes forcing people to relocate to newly built cities, like Sepphoris (Riches 1990:22, 25; Stark 1996:156; Josephus 1737:362). There were occasional conflicts between ethnic groups and their Roman rulers, and, when they deemed it necessary, the Romans would use military force to quell revolts (Jeffers 1999:118-119; Josephus 1737). There was also widespread inequality, with many people living in poverty and large populations of slaves (Jeffers 1999:181, 221). Additionally, many Jewish people had increasing contact with non-Jewish people, languages, religions, and ideas as a result of the Hellenization of Palestine, or the growing influence of Greek thought, language, and culture (Riches 1990:26-29). The period in which Jesus lived and ministered was marked by tensions among the civil and religious authorities, social divisions, and social change.

Important Categories in the Gospels

The Gospels depict Jesus as interacting with three important categories of people: (1) his family and followers; (2) the civil and religious authorities; (3) stigmatized people. These groups are introduced below.

Jesus's family and followers. Jesus's family members and followers play an important role in his life and ministry. According to Matthew, his parents, Mary and Joseph, protected him during his early life, both from Herod the Great and Archelaus (2:13, 22). In John, Mary, Jesus's mother, was also present at his first miracle (2:1-11) and his crucifixion (19:25-27). Whereas Mary was an important source of support during Jesus's ministry, Jesus's brothers (James, Judas, Simon, and Joses), however, appeared to be less supportive (John 7:1-8).[1] Another important family member is John the Baptist, whose mother was Mary's relative, according to Luke (1:36). John the Baptist laid the foundation for Jesus's ministry by prophesying about Jesus, baptizing Jesus at the beginning of his ministry, and sending some of his disciples to be Jesus's disciples (Matthew 3; Mark 1; Luke 3; John 1).

Jesus also had many close friends and followers during his life and ministry. The most prominent were the twelve disciples, who followed him, learned from him, and participated

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[1] Some people question whether these men were Jesus's brothers, suggesting that they were cousins or step-brothers (Bauckham 1990:19). While Jesus's brothers do not appear to be supportive of his calling and ministry in John 7, they played important roles in early Christianity by overseeing nascent Christian communities, writing epistles, and even becoming martyrs (Bauckham 1990, 1999).

in his ministry (Matthew 10:2-4; Mark 3:16-19; Luke 6:13-16).[2] In Luke, Jesus also appointed seventy additional disciples during his ministry (Luke 10:1). The Gospels depict a number of people worshipping Jesus during his infancy, like the shepherds, wise men, Anna, and Simeon (Matthew 2; Luke 2). A group of women also followed Jesus, provided material support for his ministry, and were present at his crucifixion and resurrection; this group included Mary Magdalene, Mary the mother of James and Joses, Salome,[3] Joanna, Susanna, and perhaps others (Luke 8:1-3; Matthew 27:55-56; Mark 1:1-8; Bauckham 2002). Jesus also had close friendships with Mary and Martha of Bethany (Luke 10:38-42; John 11).

Civil and religious authorities. Both civil and religious authorities played important roles in first century Jewish life. During this time period, Palestine was occupied by the Roman Empire (Riches 1990:10), and there were a number of important civil authorities. Herod the Great ruled Judea, Galilee, and Samaria and was the client king when Jesus was born; Matthew identifies him as the one who slayed the young boys when trying to kill the young Jesus (Jeffers 1999:122-123; Matthew 2:16). After Herod the Great died, his kingdom was split between his three sons. Two of his sons, Archelaus and Philip, are briefly mentioned in the Gospels (Jeffers 1999:127; Matthew 2:22; Mark 6:17), but one son, Herod Antipas, was an important civil figure during Jesus's ministry. Herod Antipas ruled Galilee and imprisoned John the Baptist because, according to Matthew and Mark, John rebuked him for marrying the wife of his brother, Philip (Matthew 14:3-4; Mark 6:17-18). Herod Antipas later beheaded John the Baptist (Jeffers 1999:125; Matthew 14:10; Mark 6:16) and also questioned Jesus before his crucifixion (Jeffers 1999:126-127; Luke 23:7-12). Jesus also interacted with Pontius Pilate, a Roman prefect who governed Judea and who sentenced Jesus to death since the Jewish leaders did not have the authority to execute people (Jeffers 1999:130; Matthew 27:24-26). Additional Roman authorities in the Gospels include centurions (Matthew 8; Mark 15; Luke 7, 23) and the soldiers of Pilate (Matthew 27; Mark 15).

Religious leaders also played important roles in first century Palestine. An important religious figure was the high priest, who was perceived to be "the mediator between Israel and … God," offered yearly sacrifices for atonement in the holy of holies, and received Roman permission to conduct religious rituals in the Temple (Sakenfeld et al. 2006:519). The high priest chaired the Sanhedrin, a governing council of chief priests, scribes, and religious experts (Sakenfeld et al. 2009b:105). In the Gospels, the high priest, Caiaphas, interrogated Jesus before his crucifixion (John 18:24), and people who were likely members of the Sanhedrin, including chief priests, elders, and scribes, challenged Jesus about the nature of his authority (e.g., Matthew 21, Mark 11, Luke 20) and questioned him before

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[2] Scholars disagree on whether there was a fixed group of twelve disciples or whether the number twelve was purely symbolic (Meier 1997:657). This study codes references to the group of Jesus's disciples as a node and includes additional nodes for twelve different disciples, whose names were harmonized across the three lists presented in the Gospels (Matthew 10:2-4; Mark 3:16-19; Luke 6:13-16; Glover 1939:44-45).

[3] Scholars have debated whether Salome was also the mother of James and John, the sons of Zebedee (Bauckham 2002). This study codes Salome (Mark 15:40; 16:1) and the mother of Zebedee's children (Matthew 20:20; Matthew 27:55-56) as the same person.

his crucifixion (Matthew 26; Mark 14; Luke 22). During this period, there were also two groups of religious authorities with differing ideas about Jewish life. The Sadducees were a smaller group with high political status that sought to preserve the Temple and liturgical traditions of the Jewish people (Riches 1990:59; Sakenfeld et al. 2009b:35). The Pharisees were a larger, more popular group that probably taught in the local synagogues. They valued keeping the Jewish law, intensive study of the law, and ritual purity (Riches 1990:60-61, 83). The Gospels depict Jesus debating with both the Sadducees and the Pharisees, but more often with the Pharisees (e.g., Matthew 22). Sometimes the Jewish religious leaders are simply referred to as "the Jews," with the text not differentiating between specific leaders; this is the most common in the Gospel of John (e.g., John 9; Powell 1998:121; Beutler 2006:146-148). This paper refers to this group as the "Jewish leaders."[4]

Stigmatized people. Stigma refers to "an attribute that makes [a person] different from others, ... reduced in our minds from a whole and usual person to a tainted, discounted one" (Goffman 1963:3). There can be different types of stigma, and Erving Goffman identified three: (1) stigma of the body, through sickness or deformity; (2) stigma of character, through wrongdoing or criminal activity; (3) tribal stigma, regarding race, religion, or nation (1963:4). These three types of stigma correspond to the three main stigmatized groups in first century Palestine.

The first group includes people who are sick, disabled, or demon-possessed.[5] Many first century Jewish people had contact with these people for two reasons. First, many people lived in cities, and disease spread more rapidly in cities because of their denser populations (Stark 1996). Second, those who were sick or disabled were likely to congregate in cities (Riches 1990:26), begging for alms near temples or religious locations (John 5:2-3). Examples of people with bodily stigma in the Gospels include lepers (Luke 17:11-19; see Leviticus 13), an epileptic/demon-possessed boy (Matthew 17:14-18), and a woman with a flow of blood (Mark 5:25-34; see Leviticus 15). The second group consists of people who were stigmatized by their character, whether due to their personal wrongdoing, criminal activities, or work in occupations that were considered sinful, like prostitution or tax collecting (Sakenfeld et al. 2009a:650; Sakenfeld et al. 2009b:477). Examples of people stigmatized by their character in the Gospels include a woman caught in adultery (John 8:3-11), the tax collector Zaccheus (Luke 19:1-10), and the criminals crucified with Jesus (Luke 23:39-43). The final stigmatized group includes people who were from a different "tribe" (i.e., race, ethnicity, or nationality), and many Jewish people in the first century had increasing contact with such people due to the Roman occupation and the growing Hellenization of Palestine (Riches 1990:10, 26-29). People stigmatized by tribe in the Gospels include a Samaritan woman (John 4:7-26) and a Canaanite woman (Matthew 15:22-28).

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[4] This study refers to this group as the "Jewish leaders" instead of "the Jews" because the term "Jew(s)" can have a derogative connotation.

[5] Demon-possession often manifested as illnesses or disabilities in the Gospels (Weissenrieder 2003).

Research Questions

The following research questions guide this study's examination of Jesus's social network, focusing on the three important categories of people with whom he interacted—his family and followers, the civil and religious authorities, and stigmatized people.

1. What does Jesus's social network look like? What are its basic characteristics?
2. Are the interactions between Jesus and each category mostly positive or negative? Also, are the interactions within and between these categories mainly positive or negative?
3. Who is central (i.e., important and well connected) in Jesus's social network? Are people in certain categories more or less central?

DATA

This paper analyzes Jesus's social network, based on the interactions recorded in the four Gospels of the New Testament: Matthew, Mark, Luke, and John (Powell 1998:1).[6] It is important to note that these Gospels are not biographies of Jesus but rather theological writings to certain Christian communities about Jesus's life and ministry (Powell 1998:7-8; White 2004:98). Each gospel conveys a unique emphasis and specific theological points (Powell 1998:2). Although these Gospels certainly do not describe all of Jesus's interactions (Powell 1998:7), they are the earliest sources about Jesus's life (White 2004:98). Additionally, when conducting analyses of the Gospels, it is difficult to differentiate Jesus's actual words, actions, and intentions from the perspectives or interpretative frames of the authors (Hayes and Holladay 2007:22-24). This study views the texts of the Gospels as autonomous documents that are shaped by events, ideas, authors, and audiences (White 2004:116; Hayes and Holladay 2007:23, 182), and it analyzes these texts as they are, without differentiating the historical accounts from the authors' viewpoints.

This study coded interactions between humans in the Gospels, whether or not a name was given.[7] For example, a leper could be referred to as the leper from Matthew 8, since a name is not given for this leper in the text. Individuals (Jesus, Simon Peter, etc.) and concrete groups of people (the Pharisees, Sadducees, disciples of Jesus, etc.) were included as actors. Some groups were treated as actors, while individual members were also treated as distinct actors. The most common instance includes coding the group of Jesus's disciples as a node and then coding each of the individual disciples as nodes. References to larger conglomerates like crowds and multitudes were not coded (e.g., Matthew 14:14; Luke 6:17).

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[6] The present study coded data from the New King James Version. The data collection for this project was inspired by Christoph Römhild's social network dataset that contains all of the proper nouns, including people, places, and events, in the King James Bible (2008). Chris Harrison (2008) has produced sophisticated visualizations of Römhild's data.

[7] References to non-human beings, like God the Father, the Holy Spirit, angels, Satan, and demons, were not included.

A number of challenges arose when the same actor had multiple names, when multiple actors had the same name, and when accounts were repeated in different Gospels. Actors who had multiple names, like Simon Peter or Nathaniel/Bartholomew, were coded as one actor, based on traditional understandings of the names (Glover 1939:44-45). When different actors had the same name (like Mary Magdalene and Mary, the mother of Jesus), more details were used to distinguish between them. Similar accounts across the Gospels, like when Jesus heals the boy with epilepsy and/or a demon (Matthew 17: 14-18; Mark 9:17-27; Luke 9:38-42), were combined so that there is one epileptic/demon-possessed boy, not three (see Aland 1985:341-355). After creating an initial list of 144 actors, I removed actors who did not interact with Jesus from the final list of actors in order to focus on Jesus's social network.[8] In total, 121 actors were included in this analysis.

The matrix that indicates whether there are ties between actors is called an adjacency matrix (Borgatti, Everett, and Johnson 2013:18-20). For this study, it records whether or not a pair of actors interacted, and, if they did, whether the tie was positive or negative. Network ties are symmetric, or non-directional. In other words, they indicate, for example, whether Jesus interacted with a Samaritan woman, but not who initiated the interaction or who responded. Whether ties were positive or negative was determined by coding each interaction between each pair of actors as either positive or negative. If there were more positive than negative interactions, the tie was coded as positive; on the other hand, if there were more negative than positive interactions, the tie was coded as negative.[9]

Some attribute data were collected for the actors in Jesus's social network. Based on what was available in the text of the Gospels, the gender of the each actor was coded. The actors were also coded into the following categories: Jesus's family and followers; civil and religious authorities; stigmatized people; others who did not fit into these categories. Actors who fit into multiple categories were placed into the category that best fit their role in the narrative. For example, Pontius Pilate, who was a Gentile (i.e., stigmatized) and a civil authority, was coded with the civil and religious authorities, not stigmatized people. The Appendix lists the actors and how they were categorized.

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[8] The 23 excluded actors are: Alexander and Rufus (Mark 15); another girl (Matthew 26); another man (Luke 22); Archelaus (Matthew 2); Chuza (Luke 8); Elizabeth and Zacharias (Luke 1); Herodias, the daughter of Herodias, and Philip, Herod's brother (Matthew 14); priests and Levites (John 1); Tiberius Caesar and Lysanias (Luke 3); Malchus (John 18); officers (Mark 6); parents of the man blind from birth (John 9); a servant girl (Matthew 26, Mark 14, Luke 22, John 18); a servant of Caiaphas (Matthew 26); Simon, Judas Iscariot's father (John 6, 12, 13); soldiers (Luke 3); Zebedee, the father of James and John (Matthew 4, Mark 1).
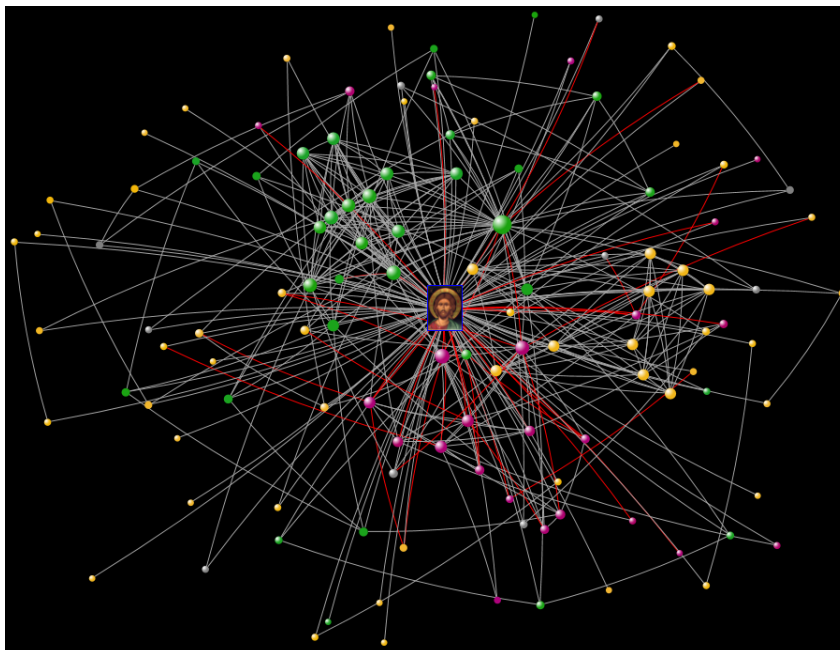
[9] There were no ties with equal numbers of positive and negative interactions.

RESULTS

Research Question #1—Introducing Jesus's Social Network

Jesus's social network is depicted in Figure 1. There are 121 actors (both individuals and groups) in Jesus's social network, including Jesus himself. Of these actors, 79% are men, and 21% are women. Of the people with whom Jesus interacted (N=120), 28.3% are his family and followers, 20.0% are civil and religious authorities, 43.3% are stigmatized people, and 8.3% are others. In Jesus's social network, there are 394 ties between nodes. Of these ties, 89% were positive, while 11% were negative. Because only actors who were connected to Jesus were included in this social network, there is only one component; there are not separate, unconnected networks (Prell 2012:153). Similarly, because all of the actors are connected to Jesus, the diameter of the social network is two, which indicates that each node is at most two steps away from any other node (Prell 2012:171). The density of the graph, or the proportion of possible ties that actually exist (Prell 2012:166), is 0.054. These network measures indicate that the network is interconnected, since everyone is connected at least through Jesus, but it is not very dense.

Figure 1. Jesus's Social Network

Legend

Node color	*Tie color*
Green – Jesus's family and followers	Light grey – Mostly positive interaction(s)
Fuchsia – Civil and religious authorities	Red – Mostly negative interaction(s)
Yellow-orange – Stigmatized people	
Grey – Others	

Node shape
3D sphere – Men
2D circle – Women

Research Question #2 — Interactions by Category

Figure 2 presents Jesus's social network when arranged by category (i.e., Jesus's family and followers, the civil and religious authorities, and stigmatized people). This figure more clearly depicts Jesus's interactions with each category and the interactions within and between the categories.

Figure 2. Jesus's Social Network, Arranged by Category

Created with NodeXL (http://nodexl.codeplex.com)

<u>Legend</u>

Node color
Green – Jesus's family and followers
Fuchsia – Civil and religious authorities
Yellow-orange – Stigmatized people
Grey – Others

Tie color
Light grey – Mostly positive interaction(s)
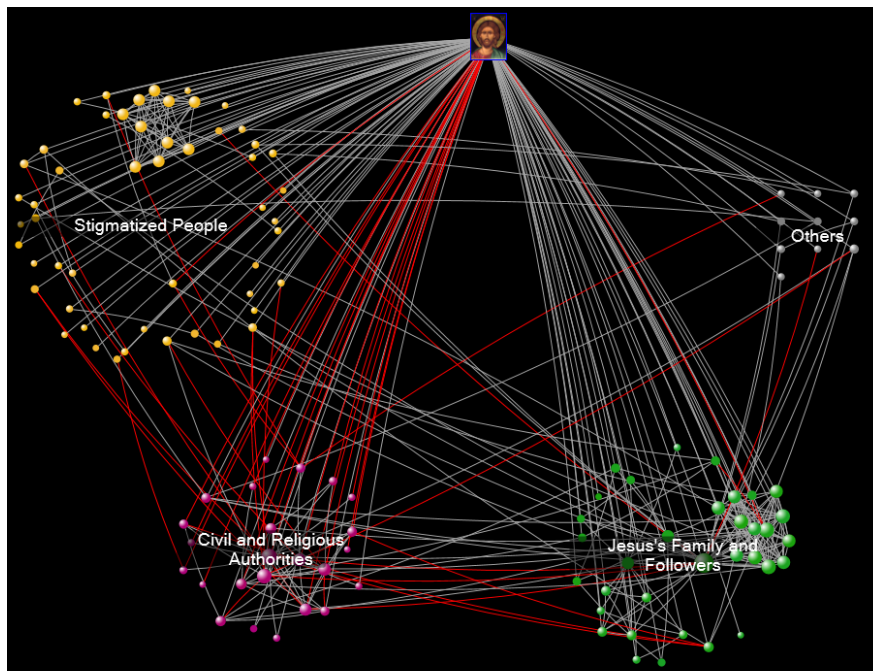Red – Mostly negative interaction(s)

Node shape
3D sphere – Men
2D circle – Women

Jesus's ties to the people in each category were either mainly positive or mainly negative. His ties with his family and followers were overwhelmingly positive (97% positive), and his only negative tie was with Judas Iscariot, the disciple who betrayed him to the religious leaders (Matthew 26; Mark 14; Luke 22; John 18). Jesus's ties with the civil and religious authorities were mostly negative (67% negative), but he did have positive interactions with some civil and religious authorities, including Nicodemus (John 3, 19), Joseph of Arimathea (John 19), and some centurions (Matthew 8; Mark 15; Luke 7, 23). Jesus's interactions with stigmatized people were also overwhelmingly positive (98% positive), and the only negative interaction between Jesus and a stigmatized person was when one of the criminals with whom he was crucified hurled insults at him (Luke 23:39).[10] Jesus also had positive interactions with the "others" who do not fit into these categories (100% positive). Jesus's interactions with his family and followers, stigmatized people, and "others" were overwhelmingly positive, but his interactions with the civil and religious authorities were mostly negative.

It is also important to examine the interactions within and between these categories of people. The ties among Jesus's family and followers were relatively dense (density=0.21) and overwhelmingly positive (99% positive). The ties among the civil and religious authorities were less dense (density=0.15) but still very positive (95% positive). The ties among stigmatized people were sparse (density=0.04) but overwhelmingly positive (100% positive). The ties between Jesus's family and followers and the civil and religious authorities were sparse (density=0.02) but mainly positive (67% positive). The ties between Jesus's family and followers and stigmatized people were very sparse (density<0.01) but still mainly positive (92% positive). The ties between the civil and religious authorities and stigmatized people were sparse (density=0.01) but mostly negative (85% negative). For two of the categories examined, Jesus's family and followers as well as the civil and religious authorities, ties were fairly dense and mostly positive within each category. Ties among stigmatized people were sparse but mostly positive. Jesus's family and followers had mostly positive ties with the civil and religious authorities and with stigmatized people, but the civil and religious authorities had mostly negative ties with stigmatized people. Ties between categories were quite sparse.

Research Question #3—Central People

Within social networks, certain analyses can determine which nodes are the most central (i.e., important or well-connected) within the network. This study uses three centrality measures to examine Jesus's social network. The first is degree centrality, which measures the number of ties for each node (Borgatti et al. 2013:165). The second is betweenness centrality, which measures the extent to which certain nodes act as bridges within the social network (Borgatti et al. 2013:174-175). The third is eigenvector centrality, a "measure of

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[10] Some people perceive Jesus's interaction with the Canaanite/Syro-Phoenician woman to be negative (Matthew 15:21-28; Mark 7:25-30). After wrestling with whether to code it as positive or negative, I decided to code it as positive since it resulted in Jesus healing the woman's daughter and praising the woman's faith.

popularity" that indicates whether nodes are connected to other well-connected nodes (Borgatti et al. 2013:168).

Table 1 presents the top five actors for each type of centrality. The five actors with the highest degree centralities (i.e., the most ties) are: Jesus; the disciples of Jesus, when mentioned as a group; the Pharisees; Judas Iscariot; the Jewish leaders and John, son of Zebedee (tie). The top five actors in terms of betweenness centrality (i.e., the top five bridges) are: Jesus; the disciples of Jesus, when mentioned as a group; the Pharisees; the Jewish leaders; Judas Iscariot. The most central actors in terms of eigenvector centrality (i.e., the most popular actors) are: Jesus; the disciples of Jesus, when mentioned as a group; Judas Iscariot; John, son of Zebedee; Simon Peter. For each measure, Jesus is the most central, and this makes sense because every node is connected to him. The other most central nodes include Jesus's disciples (as a group), three of the twelve disciples (individually), the Pharisees, and the Jewish leaders.

Table 1: The Most Central Actors in Jesus's Social Network

	Degree Centrality		Betweenness Centrality		Eigenvector Centrality	
1st	Jesus	120	Jesus	6,380	Jesus	0.060
2nd	Disciples of Jesus	33	Disciples of Jesus	196	Disciples of Jesus	0.031
3rd	Pharisees	19	Pharisees	53	Judas Iscariot	0.025
4th	Judas Iscariot	18	Jewish leaders	39	John, son of Zebedee	0.024
5th	(tie) Jewish leaders & John, son of Zebedee	17	Judas Iscariot	25	Simon Peter	0.023

Table 2 presents analyses that examine whether each category of actors is, on average, more or less central within Jesus's social network. These analyses exclude Jesus because his centrality values vastly exceed those of other actors; they also exclude the "others" in order to limit the focus of the analyses to the three main categories of people with whom Jesus interacted: (1) Jesus's family and followers; (2) the civil and religious authorities; (3) stigmatized people. For degree centrality (i.e., number of ties), Jesus's family and followers have higher than average centrality (mean=9.1; $p<0.01$), the civil and religious authorities have average centrality (mean=6.0; n.s.), and stigmatized people have lower than average centrality (mean=3.6; $p<0.001$). For betweenness centrality (i.e., bridging other nodes), Jesus's family and followers have average centrality (mean=9.8; n.s.), as do the civil and religious authorities (mean=6.2; n.s.), but stigmatized people have lower than average centrality (mean=0.1; $p<0.001$). For eigenvector centrality (i.e., popularity), Jesus's family and followers have higher than average centrality (mean=0.013; $p<0.01$), the civil and religious authorities have average centrality (mean=0.007; n.s.), and stigmatized people have lower than average centrality (mean=0.005; $p<0.001$). In Jesus's social network, his family and

followers tend to be more central, the civil and religious authorities tend to have average centrality, and stigmatized people tend to be less central.

Table 2: Centrality by Category

	N	Degree Centrality	Betweenness Centrality	Eigenvector Centrality
Average	110	5.8	4.4	0.008
Jesus's Family and Followers	34	9.1**	9.8	0.013**
Civil and Religious Authorities	24	6.0	6.2	0.007
Stigmatized People	52	3.6***	0.1***	0.005***

Notes: Significance tests examine whether the mean centrality for a category is different from the average across the groups. This analysis excludes Jesus and the "others."
* p<0.05; ** p<0.01; *** p<0.001

DISCUSSION AND CONCLUSION

This study has examined Jesus's social network, with a particular focus on Jesus's interactions with three categories of people: (1) his family and followers, (2) the civil and religious authorities, and (3) stigmatized people. This section integrates results from the preceding analyses of Jesus's social network, which introduce the network, examine patterns of positive and negative ties, and point out central figures. In doing so, it identifies themes that characterize Jesus's interactions with these categories of people.

Jesus had overwhelmingly positive ties with his family and followers.[11] They were very important and well connected in Jesus's social network, as evidenced by their high levels of centrality. Jesus's family and followers were also fairly cohesive, and there were denser ties among them. It is not surprising that Jesus's family and followers played such an important role in his social network. Research has indicated that families are important sources of social support (Feld 1984; Wellman and Wortley 1990) and that family-based ties "[involve] far more commitment, trust, and sacrifice" than do relationships with non-family members (Fischer 1982:80). Additionally, friends are important sources of support and companionship (Wellman and Wortley 1990:565). Jesus's family and followers

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[11] This assertion may be counterintuitive because the Gospels record a number of instances in which Jesus rebukes his family and followers for their unbelief, resistance to his ministry, and lack of support (Matthew 8:23-27, 16:21-23, 19:13-15; Mark 4:13, 14:32-42; John 2:1-5, 7:1-9). The ties are overwhelmingly positive, however, because whether a tie is positive or negative depends on whether there were more positive or negative interactions between a pair of actors. Although Jesus had negative interactions with his family and followers, the positive interactions largely outweighed the negative interactions.

demonstrate their support for him in a variety of ways. Jesus's family protected him during the early parts of his life (Matthew 2), and his mother was present occasionally during his ministry and stood nearby at his crucifixion (Matthew 12:46-50; John 19:25-27). Jesus's disciples followed and ministered with him (Matthew 10:1-4; Mark 3:13-19; Luke 6:12-16), and a group of women followed and materially supported him (Mark 15:40-41; Luke 8:2-3), even caring for his body after his death (Matthew 28:1; Matthew 16:1; Luke 24:1, 10). Based on these results and the research about how family and friends are important sources of support (Fischer 1982; Feld 1984; Wellman and Wortley 1990), this study characterizes Jesus's interactions with his family and followers as supportive.

Jesus's ties with the civil and religious authorities were mostly negative. His interactions with the many of the civil authorities were negative because they related to his crucifixion. Jesus also engaged in debates and arguments with a number of religious leaders, including the Pharisees (e.g., Matthew 22:15-22; Luke 5:17-26), the Sadducees (Matthew 22:23-33), the scribes (Mark 3:22-27), and the elders (Matthew 21:23-27); however, there are different perspectives on whether these interactions were negative. Debates were normative when Jewish religious leaders were discussing religious and theological questions (Schwartz 2012:xi, xv), and it is difficult to tell if these interactions were actually negative or just dialogue among leaders with different perspectives. This study, however, considers them to be negative because the Gospel writers often frame the religious leaders as being antagonistic toward Jesus. A number of examples are illustrative. An interaction where some religious leaders ask Jesus about paying Roman taxes is framed as an attempt to "trap" him (Matthew 22:15). In a discussion about whether Jesus can heal paralysis and forgive sins, Luke frames some religious leaders as accusing Jesus of blasphemy (5:21). In another situation, some religious leaders discredit Jesus by arguing that he performed miracles by the power of demons (Mark 3:22). For these reasons, this study argues that Jesus's interactions with the civil and religious authorities were characterized by conflict.

Stigma is the result of noticing differences among people and judging another person as less of a person and as objectionable (Goffman 1963:3; Link and Phelan 2001:370); it can lead to social distance between groups and even discrimination because "when people are labeled, set apart, and linked to undesirable characteristics, a rationale is constructed for devaluing, rejecting, and excluding them" (Link and Phelan 2001:370-371). Stigmatized people formed the largest category of people in Jesus's social network, and they had different network characteristics than the other categories. Stigmatized people were not very central or well connected, and few, if any, had prominent places in Jesus's social network. The cohesiveness among stigmatized people was also very low, with few interconnections among them. Interestingly, many of the stigmatized people had few connections to the broader social network beyond their tie to Jesus. Stigmatized people's network characteristics reflect their larger marginalization in first century Palestine (Riches 1990). Jesus, however, had overwhelmingly positive interactions with them, and many stories in the Gospels recount Jesus healing and forgiving them (e.g., Mark 5:25-34, Luke 7:36-50; Luke 19:1-10). Because of Jesus's positive interactions with stigmatized people, his role in connecting many of them to his broader social network, and the Gospel accounts where he heals and forgives them, this study characterizes Jesus's interactions with stigmatized people as compassionate.

This study has important limitations. First, its data sources, the four Gospels, are not complete accounts of Jesus's life but theological writings about Jesus's life and ministry to specific Christian communities (Powell 1998:7-8; White 2004:98). These Gospels do not cover every period of Jesus's life (Powell 1998:7), and they also do not record all or even most of the interactions that the actors in Jesus's social network had. While the four Gospels are the oldest accounts of Jesus's life and ministry (White 2004:98), at best one can only partially construct Jesus's social network from them. Second, it is also difficult to differentiate between what actually happened historically and the authors' perspectives (Hayes and Holladay 2007). This study cannot determine how Jesus intended to interact with the people and groups in his social network, but it reflects how the Gospel writers framed these interactions.

This study is the first, to my knowledge, to analyze Jesus's social network, based on interactions recorded in the four Gospels of the New Testament. Based on the analyses, this study argues that Jesus's interactions with his family and followers were characterized by support, that his interactions with the civil and religious authorities were characterized by conflict, and that his interactions with stigmatized people were characterized by compassion.

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Appendix: Actors by Category

Category #1—Jesus

1.   Jesus

Category #2—Jesus's family and followers

1.   Andrew
2.   Anna
3.   Bartholomew (also known as Nathanael)
4.   Disciples of Jesus
5.   James, brother of Jesus
6.   James, son of Alphaeus
7.   James, son of Zebedee
8.   Joanna
9.   John, son of Zebedee
10.   John the Baptist
11.   Joseph
12.   Joses, brother of Jesus
13.   Judas Iscariot
14.   Judas, brother of Jesus
15.   Martha of Bethany
16.   Mary Magdalene
17.   Mary, mother of James and Joses
18.   Mary, mother of Jesus
19.   Mary of Bethany
20.   Mary, wife of Cleopas
21.   Matthew
22.   Philip
23.   Salome (also the mother of James and John, the sons of Zebedee)
24.   Seventy others
25.   Shepherds
26.   Simeon
27.   Simon Peter
28.   Simon, brother of Jesus
29.   Simon, the Canaanite (also known as Simon the zealot)
30.   Sister of Mary, the mother of Jesus
31.   Susanna
32.   Thaddeus (also known as Judas, son of James or Judas, not Iscariot)
33.   Thomas
34.   Wise men (also known as Magi)

Category #3—Civil and religious authorities

1.   Annas
2.   Caiaphas
3.   Captains of the temple
4.   Centurion (Mark 15, Luke 23)
5.   Centurion (Matthew 8, Luke 7)
6.   Chief Priests
7.   Elders
8.   Herod Antipas
9.   Herodians
10. Jairus
11. Jewish leaders
12. Joseph of Arimathea
13. Lawyers
14. Nicodemus
15. Pharisees
16. Pontius Pilate
17. Rich young ruler
18. Ruler of the synagogue
19. Sadducees
20. Scribes
21. Simon, a Pharisee
22. Soldiers of Pilate
23. Teachers of the law
24. Wife of Pilate

Category #4—Stigmatized people

1.   Barabbas
2.   Bartimaeus (Mark 10, Luke 18)
3.   Blind man #1 (Matthew 9)
4.   Blind man #2 (Matthew 9)
5.   Blind man #1 (Matthew 20)
6.   Blind man #2 (Matthew 20)
7.   Blind man (Mark 8)
8.   Crucified criminal #1
9.   Crucified criminal #2
10. Daughter of Jairus
11. Daughter of the Syro-Phoenician woman
12. Dead man raised (Luke 7)
13. Deaf, mute man (Mark 7)
14. Demon-possessed man #1 (Matthew 8, Mark 5, Luke 8)
15. Demon-possessed man #2 (Matthew 8)

16. Epileptic
17. Greeks
18. Lazarus
19. Leper #1, also a Samaritan (Luke 17)
20. Leper #2 (Luke 17)
21. Leper #3 (Luke 17)
22. Leper #4 (Luke 17)
23. Leper #5 (Luke 17)
24. Leper #6 (Luke 17)
25. Leper #7 (Luke 17)
26. Leper #8 (Luke 17)
27. Leper #9 (Luke 17)
28. Leper #10 (Luke 17)
29. Leper (Matthew 8, Mark 1, Luke 5)
30. Man blind from birth
31. Man mute, blind, and with a demon (Matthew 12, Luke 11)
32. Man with a demon (Mark 1, Luke 4)
33. Man with dropsy
34. Man with infirmity (John 5)
35. Man with a withered hand
36. Mother-in-law of Peter
37. Mute man (Matthew 9)
38. Nobleman's sick son
39. Paralytic (Matthew 9, Mark 2, Luke 5)
40. Poor widow (Mark 12, Luke 21)
41. Samaritans
42. Simon, the leper
43. Sinful woman (Luke 7)
44. Syro-Phoenician woman
45. Tax collectors
46. Tax collectors and sinners
47. Woman caught in adultery (John 8)
48. Woman of Samaria (John 4)
49. Woman with an alabaster flask
50. Woman with an issue of blood
51. Woman with infirmity (Luke 13)
52. Zaccheus

Category #5—Others

1. Boy with five loaves and two fish
2. Children
3. Cleopas
4. Disciples of John the Baptist

5. Father of the epileptic
6. Nobleman
7. Person with Cleopas (Luke 24)
8. Simon of Cyrene
9. Widow mother (Luke 7)
10. Wife of Jairus