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**BECOMING MORE THAN A DIGITAL BULLHORN:
TWO-WAY ENGAGEMENT ON TWITTER FOR LAW
ENFORCEMENT**

by

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March 2016

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**BECOMING MORE THAN A DIGITAL BULLHORN: TWO-WAY
ENGAGEMENT ON TWITTER FOR LAW ENFORCEMENT**

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ABSTRACT

Police agencies are increasingly turning to social media to communicate with the public; some departments only push information out one way, while others engage in a two-way, back-and-forth conversation. Research is robust on topics such as two-way engagement, the benefits of a large following, and the positive impact government can have by using social media during and after crises, but there is a marked lack of police-specific quantifiable data. The purpose of this thesis is to determine if two-way engagement on Twitter leads to an increase in followers.

A case study analysis of three Silicon Valley, California, police departments' Twitter engagement habits showed that agencies using a two-way communication model receive more new followers overall than agencies using a one-way model. The analysis did not, however, conclusively find a direct relationship on a monthly or daily basis between the amount of two-way engagement and the number of followers. Ultimately, the research reveals a number of tactics that police agencies can employ to increase two-way engagement, and recommends strategic implementation devices.

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LIST OF ACRONYMS AND ABBREVIATIONS

CHDS	Center for Homeland Defense and Security
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
IACP	International Association of Chiefs of Police
MVPD	Mountain View Police Department
NIMS	National Incident Management System
NIOA	National Information Officers Association
PAPD	Palo Alto Police Department
PIO	Public Information Officer
SCPD	Santa Clara Police Department
URL	Uniform Resource Locator

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EXECUTIVE SUMMARY

Law enforcement social media use is a hot topic among today's police chiefs and sheriffs. With the amount of public attention focused on police agencies in contemporary society, the way agencies choose to communicate and interact with their communities is critically important. Social media factored heavily in the police response to the Ferguson demonstrations and in the U.S. Department of Justice's *Final Report of the President's Task Force on 21st Century Policing*. Agencies must determine not only that they will use social media, but *how* they want to engage. Will they be the equivalent of a digital bullhorn, pushing information at the public in a one-way manner only? Or will they dedicate the time and energy to be responsive on social media, and engage in regular, two-way, back-and-forth communication? The time to employ this strategy is now, in advance of a crisis situation.

The primary goal of this thesis was to determine if two-way engagement on Twitter leads to an increase in followers. An ancillary goal was to identify two-way engagement factors that contribute to increased followership, allowing agencies to tailor the way they tweet to maximize engagement. The more followers an agency social media account has, the more people they can engage during times of crisis. A terrorist attack, school shooting, or other crisis event could occur in any police jurisdiction in America; having a large pre-crisis social media following allows an agency to maximize the reach of their emergency messaging, both in their own communities and beyond.

This thesis used an evaluative research paradigm to study the two-way Twitter engagement practices of three local law enforcement agencies in California's Silicon Valley region. All tweets sent by each agency in the six-month period between April 21 and October 21, 2015, were examined. The number of "reply" tweets they sent to other Twitter users in response to a question or other comment was tabulated, showing their amount of two-way engagement on a monthly and daily basis. These numbers were compared to their number of new followers over the same periods. Other available information on the agency's two-way engagement habits was collected and studied as

well. All data was analyzed to determine if patterns existed, or if conclusions could be drawn to help police agencies increase opportunities for two-way engagement.

The analysis showed that the two agencies using a two-way communication model received more followers overall than the agency using a one-way model. Both of the agencies employing a two-way model sent more than half of their tweets during the study period in reply to other Twitter users. The data did not show a clear relationship on either a monthly or daily basis, however, between the amount of two-way engagement and the number of followers.

The data yields a number of conclusions that lead to recommendations for agencies looking to increase two-way engagement. The study showed that members of the public most often engaged with agency tweets about community policing, real-time news, and static news. The subject matter of a tweet can make a substantial difference in the number of user replies it generates, more so than if a tweet contains a picture or video. Agencies should take advantage of opportunities for exceptional follower growth by tweeting about major incidents in a timely way, as the biggest leaps in follower numbers during the study period occurred when the agency tweeted about a major incident in real-time. Also, the research identified three reply-tweet methods; agencies can employ a particular method to capitalize on a tweet's two-way engagement benefit.

The data also showed that the two agencies employing a two-way engagement model (and gaining more followers in the process) shared a few common habits. They regularly responded to self-initiated user inquiries, in which users asked questions, reported crimes, and communicated concerns. They had many ongoing, multi-tweet conversations with users—a virtual version of an in-person conversation. They also routinely initiated conversations with Twitter users in an attempt to spur engagement.

At a time when resource-constrained police agencies are struggling with how (or even *if*) to staff their social media programs, this research can give police executives data to help them make staffing decisions. The research indicates that personnel managing law enforcement Twitter accounts can gain more followers by using the platform to actively

engage in two-way communication with the public, rather than using it simply as another tool to broadcast information one-way to their communities.

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Hey Riley, Daddy is finally done with his "big paper." I'm home for good this time.

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I. INTRODUCTION

In a 2015 survey of police departments nationwide, the International Association of Chiefs of Police (IACP) Center for Social Media found that 96.4 percent of responding agencies used social media in some capacity.¹ They use those platforms for a variety of purposes, ranging from routine traffic advisories and event notifications to the real-time dissemination of emergency instructions during crisis events. Some agencies only use social media as a “glorified fax machine,” pushing information *one-way* to their community, while others harness the true “social” nature of the platforms by encouraging and developing *two-way* engagement.² The IACP released a social media maturity model in the fall of 2014 that placed agencies committed to two-way engagement online higher on the spectrum than agencies using the technology simply as a one-way messaging tool.³ While two-way engagement seems an exceptionally common mantra in the law enforcement social media community, there has been little research done to study if two-way engagement actually has measurable benefits to police agencies.

Social media followership is exceptionally important. The use of social media by law enforcement as a tool for crisis communications is becoming increasingly widespread; the more followers an agency social media account has, the more people they can engage in times of crisis. A terrorist attack, school shooting, or other crisis event could occur in any police jurisdiction in America. Having a large pre-crisis social media following allows agencies to maximize the reach of their emergency messaging in their communities and beyond. The more people who see a message, regardless of where they may live, the more people who can pass the information, extending its reach.

¹ International Association of Chiefs of Police (IACP), “2015 IACP Social Media Survey,” IACP Center for Social Media, accessed November 22, 2015, 1, www.iacpsocialmedia.org/Portals/1/documents/FULL%202015%20Social%20Media%20Survey%20Results.pdf.

² Chris Hsiung, “Professionalization of the Social Media Manager Role,” *The Social Media Beat*, last modified April 4, 2014, blog.iacpsocialmedia.org/Home/tabid/142/entryid/358/Default.aspx.

³ International Association of Chiefs of Police, *Making Social Media Part of the Uniform*, (Accenture, 2014), http://www.iacpsocialmedia.org/Portals/1/documents/external/LESMPoV2014_FINAL.pdf.

The primary goal of this thesis is to determine if two-way engagement on Twitter leads to an increase in followers. An ancillary goal is to identify two-way communication factors that increase followership, allowing agencies to tailor the way they tweet to maximize engagement. Case studies are used to examine if the rate of two-way engagement relates to the numbers of agency Twitter followers. A deeper analysis is then performed to see what factors, if any, may affect that relationship, and why. While there are a multitude of social media platforms, Twitter is one of the two most-used platforms by police agencies.⁴ The availability of Twitter data is also conducive to the type of analysis performed in this thesis.

Many resource-strained police agencies are struggling with how (or even *if*) to staff their social media programs. The results of this research can have real bearing on the future of law enforcement social media by giving police executives data to help them make staffing decisions. This research will give these executives the data necessary to determine if new efforts and investments into social media programs might be beneficial, and help them realize the potential benefits of two-way engagement as a way to improve their relationships with their communities.

The topic of community engagement by law enforcement is timeless, and it is relevant to every American law enforcement agency, large and small. It is also a topic receiving significant contemporary national attention in the aftermath of the Ferguson riots in the fall of 2014, where police and community members clashed over the controversial shooting death of an unarmed black man by a white police officer. In light of the resulting nationwide initiatives concerning relations between the police and community, a formal study of the potential benefits of two-way engagement via social media is especially timely.⁵

⁴ IACP, “2015 IACP Social Media Survey,” 1.

⁵ Two such major initiatives are President Barack Obama’s *Task Force on 21st Century Policing*, created by Executive Order on December 18, 2014 (<http://www.cops.usdoj.gov/policingtaskforce>), and the IACP’s *Protect and Serve Initiative*, also launched in December 2014 (<http://www.theiacp.org/protectandserve>).

A. BACKGROUND

The use of social media by American law enforcement agencies is widespread. In 2015, an International Association of Chiefs of Police (IACP) annual survey of 553 law enforcement agencies in 44 states showed that 96.4 percent of the agencies surveyed used social media in some capacity, with the most frequently used platforms being Facebook (94.2 percent) and Twitter (71.2 percent).⁶ An overwhelming majority (83.5 percent) of surveyed agencies stated that social media had “improved police-community relations in their jurisdiction.”⁷ Of the top five reasons for agencies’ social media use, four were closely related to the job of a public information officer (PIO): notifying the public of crime problems (84.3 percent), engaging community outreach/citizens (83.4 percent), maintaining public relations/reputation (82.5 percent), and providing emergency or disaster-related information (79.9 percent).⁸

However, law enforcement’s use of social media—or, more importantly, the lack thereof—attracted significant attention in the 2014 events in Ferguson, Missouri. While Ferguson “became a defining moment in policing history,” the U.S. Department of Justice’s after-action assessment of the events found that, despite social media being the “key global driver” of the demonstrations, the four main police agencies involved underestimated its impact and “failed to have a social media strategy.”⁹ One of the ten critical issues identified in the report was social media, and one of its six overarching themes was “inadequate communication and information sharing.”¹⁰ In this regard, the assessment stated that police agencies’ goal should be to “establish a social media platform that builds trust with the community and encourages *two-way communication* between the police and the communities they serve” (emphasis added).¹¹ The report notes

⁶ IACP, “2015 IACP Social Media Survey,” 1.

⁷ *Ibid.*

⁸ *Ibid.*, 5.

⁹ United States Department of Justice, *After-Action Assessment of the Police Response to the August 2014 Demonstrations in Ferguson, Missouri* (Washington, DC: U.S. Department of Justice, 2015), xix, xviii, 103.

¹⁰ United States Department of Justice, *After-Action Assessment*, xviii, xiv.

¹¹ *Ibid.*, 103.

that such two-way use of social media can benefit the police by “building trust and a sense of community” and by “providing a forum through which people can ask questions.”¹² The report explains that “by allowing users to reply to or comment on law enforcement’s posts, social media permits an agency to receive direct feedback and response to police statements, which can be valuable for law enforcement decision makers,” further adding that the police “can use social media to be transparent and to foster relationships of trust.”¹³ At the time of the demonstrations, the Ferguson Police Department did not have a Facebook page but did have a Twitter account.¹⁴ That Twitter account, however, was inactive until after the demonstrations began, has not been used at all since November 2014, and even indicates on its profile that “Replies will NOT be answered.”¹⁵

The push for two-way engagement using digital tools is nothing new; indeed one of President Obama’s first actions upon taking office was distributing a widespread federal memo on “Transparency and Open Government.”¹⁶ In that memo, Obama wrote that his administration is “committed to creating an unprecedented level of openness in Government,” and that the government would work to “establish a system of transparency, public participation, and collaboration.”¹⁷ To that end, he continued, “Agencies should use innovative tools, methods, and systems to cooperate among themselves, across all levels of Government, and with nonprofit organizations, businesses, and individuals.”¹⁸ Specifically regarding public participation, he wrote,

¹² Ibid., 97.

¹³ Ibid., 102, 97.

¹⁴ Ibid., 100.

¹⁵ Ferguson Police Department, “Ferguson Police Department on Twitter,” Twitter.com, accessed February 10, 2016, www.twitter.com/FPD_PUBLIC_INFO.

¹⁶ Barack Obama, “Memorandum for the Heads of Executive Departments and Agencies: Transparency and Open Government,” last modified January 21, 2009, https://www.whitehouse.gov/sites/default/files/omb/assets/memoranda_fy2009/m09-12.pdf.

¹⁷ Obama, “Memorandum.”

¹⁸ Ibid.

“Public engagement enhances the Government’s effectiveness and improves the quality of its decisions.”¹⁹

In the aftermath of the Ferguson demonstrations and other national high-profile law enforcement actions, President Obama created the 21st Century Policing Initiative via executive order in December 2014.²⁰ The task force studied best practices in policing and how to build public trust while reducing crime, and, in so doing, referenced two-way engagement on social media. One of the six primary topics the task force identified was “Technology and Social Media,” and one of the main recommendations within this section was that police agencies should adopt best practices for “technology-based community engagement that increases community trust and access.”²¹ Such practices should encourage the use of social media “as a means of community interaction and relationship building.”²² The report further clarifies that social media use “must be responsive and current,” and goes on to quote the oral testimony of a senior policy advisor, who urges police agencies to “regularly refresh the content to maintain and engage the audience, post content rapidly during incidents to dispel rumors, and use it for engagement, not just public information.”²³

Many other sources reflect the U.S. Department of Justice’s recommendation for police agencies’ use of two-way social media engagement. The IACP, for example, lists “two-way communication” as number four on a list of the top ten things every law enforcement executive needs to know about social media, saying that “it’s all about engagement.”²⁴ A 2010 article suggests that, by developing “more interactive and participative communication strategies” on social media, police may be able to improve

¹⁹ Ibid.

²⁰ United States Department of Justice, *Final Report of the President’s Task Force on 21st Century Policing* (Washington, DC: U.S. Department of Justice, 2015).

²¹ United States Department of Justice, *Final Report*, 2, 36.

²² Ibid., 37.

²³ Ibid.

²⁴ International Association of Chiefs of Police, “Law Enforcement Executives’ Social Media Top Ten,” IACP Center for Social Media, December 2012, www.iacpsocialmedia.org/Portals/1/documents/Fact%20Sheets/Chiefs%20Top%20Ten%20Fact%20Sheet.pdf.

the public's confidence in their work.²⁵ A constant refrain throughout Ines Mergel's 2012 book *Social Media in the Public Sector* is two-way communication, or what she refers to as bidirectional communication. Mergel writes extensively about "Government 2.0" (which she defines as "the use of social technologies to increase participation, transparency, and interagency collaboration in the public sector") and how social media platforms and other tools "allow for a *bidirectional information exchange*...in government interactions with citizens."²⁶ A prominent feature of Government 2.0, according to Mergel, is that it *pulls* information from the public and creates a possibility of back-and-forth interaction, as opposed to more traditional forms of government communication that *push* information one-way to the public.²⁷ Now, she writes, people are "expecting instant feedback" with government agencies on social media.²⁸ Social media platforms afford government officials the opportunity to "humanize and individualize" their messages in a way that "comes very close to the richness of face-to-face interactions."²⁹ Mergel writes that Twitter, specifically, "can be used effectively to engage large numbers of citizens and create public conversations with an engaged, networked public."³⁰ Two-way communication allows the government to respond—in near real-time, even—to citizen inquiries.³¹

This potential for two-way engagement has changed the way law enforcement can choose to interact with the public. Traditional PIO techniques, where personnel gave information on a one-way basis to the public, have changed; social media has created a "boundary-less communication environment."³² A government agency remaining silent

²⁵ Gary Copitch and Chris Fox, "Using Social Media as a Means of Improving Public Confidence," *Safer Communities* 9, no. 2 (2010): 44, doi: [10.5042/sc.2010.0226](https://doi.org/10.5042/sc.2010.0226).

²⁶ Ines Mergel, *Social Media in the Public Sector: A Guide to Participation, Collaboration and Transparency in the Networked World* (Somerset, NJ: John Wiley & Sons, 2012), 33.

²⁷ Mergel, *Social Media in the Private Sector*, 36.

²⁸ *Ibid.*, 57.

²⁹ *Ibid.*, 68, 61.

³⁰ *Ibid.*, 19.

³¹ *Ibid.*, 67.

³² Astrid Sheil, Michelle T. Violanti, and Kevin Slusarski, "Explaining Attitudes toward and Experiences with Social Media among Public Information Officers through Adaptive Structuration Theory," *Communications of the IIMA* 11, no. 4 (2011): 53.

on social media during a crisis event (as the Ferguson Police Department did on Twitter in the immediate aftermath of the shooting that sparked the demonstrations) “may be taken as disorganized by the public or even sending a signal of disinterest or disdain.”³³ Indeed, “the very nature of social media promotes engagement,” and it offers “immense potential for interaction with the public and monitoring the public’s concerns.”³⁴ From an emergency management standpoint, one of the three “fundamental rules” social media rules is that “conversations are key.”³⁵ When using Twitter to provide situational awareness during an ongoing incident, an Associated Press manager said that social media is “most effective when the communication is two-way.”³⁶

Police agencies that are choosing not to engage with their public via social media may want to take special note of a 2010 American Red Cross study that highlights people’s expectations during disasters. One in five people indicated they would attempt to reach first responders through digital media (email, websites, or social media) if they needed help and could not reach 9–1-1.³⁷ Perhaps even more remarkable was that 74 percent expected first responders to arrive less than one hour after a tweet or Facebook message was sent.³⁸ As one emergency manager wrote after examining the American Red Cross study results, “It is operationally, ethically and politically irresponsible for local emergency management organisations simply to try and ignore social media’s impact on their response.”³⁹

³³ Cécile Wendling, “The Use of Social Media in Risk and Crisis Communication,” *OECD Working Papers on Public Governance* 25 (2013): 9, doi: [10.1787/5k3v01fskp9s-en](https://doi.org/10.1787/5k3v01fskp9s-en).

³⁴ Lynda A. Peters, “Utilizing Social Media to Further the Nationwide Suspicious Activity Reporting Initiative” (Master’s thesis, Naval Postgraduate School, 2012), 73; David E. Alexander, “Social Media in Disaster Risk Reduction and Crisis Management,” *Science and Engineering Ethics* 20, no. 3 (2014): 730, doi: [10.1007/s11948-013-9502-z](https://doi.org/10.1007/s11948-013-9502-z).

³⁵ Adam Crowe, “The Social Media Manifesto: A Comprehensive Review of the Impact of Social Media on Emergency Management,” *Journal of Business Continuity & Emergency Planning* 5, no. 1 (2011): 411.

³⁶ Ed Tobias, “Using Twitter and Other Social Media Platforms to Provide Situational Awareness During an Incident,” *Journal of Business Continuity & Emergency Planning* 5, no. 3 (2011): 208.

³⁷ “Web Users Increasingly Rely on Social Media to Seek Help in a Disaster,” American Red Cross, last modified August 9, 2010, <http://newsroom.redcross.org/2010/08/09/press-release-web-users-increasingly-rely-on-social-media-to-seek-help-in-a-disaster/>.

³⁸ “Web Users,” American Red Cross.

³⁹ Crowe, “Social Media Manifesto,” 416.

While it seems straightforward that law enforcement agencies should engage in two-way communication with their communities on social media, having the staff resources for the endeavor is another matter entirely. In the 2015 IACP annual social media study, over 60 percent of responding agencies said they were “somewhat concerned” or “very concerned” about the resource commitments that staffing a social media program takes.⁴⁰ As far back as 2011, police executives were worrying about how to staff these units. For example, in an article written for IACP that year, Colonel Steve Flaherty of the Virginia State Police wrote:

Do we need to revise our crisis communications plans to include staffing Facebook and Twitter accounts with a dispatcher? ... Monitoring and managing these sites do cost our agencies in time and people. In a crisis, those people are typically preoccupied with the incident at hand. Do these same folks have the time and availability to keep up with a crisis playing out in both the real and virtual worlds? How many people is a law enforcement agency willing and able to dedicate to social media? Managing the public’s expectations can be overwhelming even in the most minor of incidents.⁴¹

Fast forward four years to 2015—the Ferguson after-action assessment from the U.S. Department of Justice recommends “agencies should designate personnel whose primary responsibility is to monitor and share information proactively through various social media tools,” adding that this job “is surprisingly labor-intensive and will not be effective if it is merely an add-on duty.”⁴² The Ferguson report notes that this will require money and positions, but that an “investment and commitment” is mandatory to have an effective social media presence.⁴³ Indeed, Mergel writes that social media can have “disruptive effects” on organizations; the main challenges to overcome when implementing an effective social media program are where to put the social media manager in the organizational chart, and how to obtain dedicated resources to operate the

⁴⁰ IACP, “2015 IACP Social Media Survey,” 25.

⁴¹ Steve Flaherty, “Social Media from a Colonel’s Perspective,” IACP Center for Social Media, last modified August 2011, <http://www.iacpsocialmedia.org/ChiefsCorner/ChiefsCornerArticle.aspx?cmsid=5412>.

⁴² United States Department of Justice, *After-Action Assessment*, 103.

⁴³ *Ibid.*, 104.

platforms.⁴⁴ A 2011 study on social media use by American firefighting organizations similarly noted that “all governmental agencies will have to reorganize their communication functions” as social media grows in popularity.⁴⁵ The costs associated with proper staffing cause governments to view social media “with some caution” and some emergency management organizations are even “overwhelmed” by it.⁴⁶ The effects of not having a properly staffed unit can be severe; for example, a report by the Police Executive Research Forum on the 2015 riots in Baltimore following the death of in-custody prisoner Freddie Gray found that “inadequate staffing of the public information function can have serious adverse impacts on both short-term operations and the long-term reputation of the police department.”⁴⁷ The report also notes that when the department is not able to produce information in a timely manner, “the department’s view is not included in news stories, and rumors and inaccurate information cannot be corrected in a timely manner. Even worse, reporters and the public may believe the department is trying to hide information.”⁴⁸

In contemporary American law enforcement, there is an identified and recommended need for robust police agency presence on social media—presence that engages the public with two-way, back-and-forth communication. This requires staffing and resources. In today’s resource-constrained budget environment, the creation of new positions such as “social media managers” or “digital communication specialists” may be a hard sell for police executives, especially when concepts like “engagement” and “building trust” are difficult to measure. The research conducted as part of this thesis is designed to fill that gap by providing police executives with law enforcement-specific data that may be used as part of a justification to create dedicated social media positions.

This thesis intends to meet an identified need for research concerning the value of social media use for police agencies. Judging the value of a social media program for

⁴⁴ Mergel, *Social Media in the Public Sector*, 60, 90.

⁴⁵ Sheil, Violanti, and Slusarski, “Explaining Attitudes,” 56.

⁴⁶ Wendling, “Use of Social Media,” 6; Crowe, “Social Media Manifesto,” 417.

⁴⁷ Police Executive Research Forum, *Lessons Learned from the 2015 Civil Unrest in Baltimore* (Washington, DC: PERF, 2015), 65.

⁴⁸ Police Executive Research Forum, *Lessons Learned*, 65.

police agencies has, for now, been limited to basic metrics like platform analytics (such as the number of “likes,” “shares,” or “retweets”), success stories (perhaps a criminal is identified and arrested after a surveillance image is broadcast on social media), or anecdotal evidence (such as positive, supportive comments left on a police Facebook page); in fact, these reasons cumulatively account for over 78 percent of how police agencies measure their success on social media.⁴⁹ Mergel writes that counting “likes” or the number of followers alone does not “evaluate the true effectiveness of social media efforts,” and that few social media managers have “measurable evidence about the sentiments of their audiences.”⁵⁰ It is “still unclear,” she says, if social media use by government agencies can “transform service delivery, support the mission of individual government agencies, and increase public trust in government.”⁵¹ In a 2015 Canadian study on community policing efforts, the researchers found that a lack of quantifiable data on initiatives’ success weakens their justifications.⁵² In the final report from President Obama’s 21st Century Policing Initiative task force, they acknowledged the challenges associated with adopting new technologies without identifying clearly defined goals, costs, and benefits.⁵³

With the sheer variety of law enforcement agencies in the United States (local, county, state, tribal, federal; rural, suburban, and urban; one-person agencies to the 35,000-officer New York Police Department), it is acknowledged here, as was found in a 2012 study of government use of social media, that “the ‘best’ way to use social media in government is a nebulous and subjective problem that does not lend itself to a single set of guidelines for every task, country, agency, citizen, and government.”⁵⁴ With that said, and with the foundation laid, this introductory chapter turns next to the mechanics of this

⁴⁹ IACP, “2015 IACP Social Media Survey,” 24.

⁵⁰ Mergel, *Social Media in the Public Sector*, 124, 125.

⁵¹ *Ibid.*, 233.

⁵² Charlie Edwards, Calum Jeffray, and Raffaello Pantucci, *Out of Reach? The Role of Community Policing in Preventing Terrorism in Canada* (London: Royal United Services Institute, 2015): 45.

⁵³ United States Department of Justice, *Final Report*, 31.

⁵⁴ Michael J. Magro, “A Review of Social Media Use in E-Government,” *Administrative Sciences* 2, no. 2 (2012): 155, doi: [10.3390/admsci2020148](https://doi.org/10.3390/admsci2020148).

thesis and what it intends to accomplish for police executives investigating the usefulness of social media positions and for social media managers looking for ways to increase engagement with their communities via Twitter.

B. RESEARCH QUESTIONS AND HYPOTHESIS

This thesis uses an evaluative research paradigm to study the two-way Twitter engagement practices of three local law enforcement agencies in California’s Silicon Valley region. The primary research question is, “Is there a relationship between the amount of two-way engagement by police agencies on Twitter and their number of followers?” The ancillary research question is, “What factors, if any, seem to mediate or moderate that relationship, and why?”

The hypothesis is that there is a direct relationship between the rate of two-way engagement and the number of followers; that is to say, the more a police agency responds to the public’s tweets, the more new followers they will gain. As the public receives responses from the agency, they may be more likely to share those responses with their own followers via a “retweet,” which gives additional exposure to the agency’s Twitter account, which may, in turn, lead to new followers. Another hypothesis is that the public will be more inclined to engage with agency tweets that include certain elements (such as photos, videos, hashtags, or web links) or contextual themes (such as breaking news, or use of humor).

C. RESEARCH DESIGN

The way police agencies use Twitter varies tremendously; small agencies may not have the personnel to operate a Twitter account at all, while large agencies may have entire teams of personnel dedicated to operating a Twitter account around the clock. For that reason, the focus of the research needs to be narrowed. Three medium-sized police agencies in the greater Silicon Valley region of the San Francisco Bay Area were selected: the Santa Clara Police Department, the Mountain View Police Department, and

the Palo Alto Police Department.⁵⁵ These agencies all serve cities with a resident population of 50,000 to 125,000 people, have been regular Twitter users for at least two years, and have a minimum of 3,000 Twitter followers.

These criteria establish that the people who live within the agencies' service areas will be from the same geographic area—a generally affluent region where the populace widely embraces technology. By limiting the study to cities with a resident population of 50,000 to 125,000 people, the police agencies examined are roughly the same size and have similar numbers of personnel. By selecting agencies that have been regular Twitter users for at least two years and that also have a minimum of 3,000 Twitter followers, the study can compare departments that have an established online community of followers.

The data sources and instrumentation for the research come from Twitter directly. Twitter maintains detailed analytics that are freely available for the administrator of each account. The selected agencies' social media managers have granted access to the analytics on their accounts. They have also granted access to their archives, detailed spreadsheets compiled by Twitter of every tweet ever sent from their account. This is the primary source of the data.

For tweets sent by other users, Twitter's public website was accessed. Twitter does not keep tweets online indefinitely; rather, there is a limit to how far back into a user's history one can look. Keeping the date range of the study limited to a six-month period (from April 21, 2015 to October 21, 2015) guarantees access to other users' tweets.

This research does not identify the number of tweets an agency receives from users but chooses to leave unanswered; there is no way to easily obtain this data. It must also be acknowledged that there are myriad other factors that may impact the agency's number of Twitter followers (to name just a few: cross-promotions by the agency on other social media platforms, media attention focused on an agency's social media platforms, and exceptional events that occur in an agency's jurisdiction that attract

⁵⁵ It should be noted that the author is employed as the public affairs manager for the Palo Alto Police Department, and manages the PAPD Twitter account.

significant public attention); these factors were not generally taken into account in this study, though if there was a substantial spike in followers, an Internet search was performed to see if anything overtly obvious could have contributed to that spike (e.g., a major crime, news coverage of the agency's social media accounts, etc.), and the tweets themselves were examined for subject-matter clues that may have been responsible for the increase.

The three agencies studied do not have a specific policy that requires them to either respond to every tweet directed at them, or to refrain from responding to any tweet directed at them. This ensures that each agency's staff has the discretionary ability to respond to any tweet directed at them if they so choose. The three agencies being studied do not pay Twitter for "sponsored tweets," so any growth on their accounts during the study period is organic in nature and not from paid advertisements.

All tweets sent by each agency during the six-month period between April 21 and October 21, 2015, were examined. Also examined were self-initiated tweets sent by users to the police departments (and to which the agencies replied) to determine the general subject matter of the users' tweets. Refer to Appendix A for definitions of various terms used throughout this thesis, including "self-initiated tweets." A descriptive coding method was used to sort the tweets into various categories. Refer to Appendix B for the coding structure used. The number of "reply" tweets they sent to another user in response to a question or other comment was counted, and the percentage of total tweets that are considered "replies" as a measure of their amount of two-way engagement (as opposed to "original" tweets being the equivalent of a one-way push of information to their community) was determined. Their total number of Twitter followers over the span of the six months was also tabulated. Their rate of two-way engagement was compared with their number of new followers on a *monthly* basis (and even a *daily* basis for 90 days, the only segment of time for which Twitter archives daily follower numbers) over the study period to determine if there was a relationship.

Other available information on the agency's two-way engagement habits was collected and studied as well. For any "reply" tweet sent by an agency, analysis determined if it was sent in response to a tweet from a member of the public, or if it was

self-initiated, essentially “out of the blue,” by the agency. If sent in response to a tweet from a member of the public, it was determined if the user was self-initiating contact with the agency or if their tweet was a response to another tweet sent by the agency. If the user’s tweet was in response to another tweet from the agency, it was determined if the underlying agency tweet to which they were responding contained a photo, a video, a hashtag, and/or a web link. All of this data was analyzed to determine if any patterns exist, or if any conclusions can be drawn to assist police agencies looking to increase two-way engagement opportunities.

Chapter II contains a literature review that analyzes scholarly research in social media, and identifies existing knowledge gaps that warrant further scholarship.

Chapters III, IV, and V contain detailed data from the Twitter accounts of the Santa Clara Police Department, Mountain View Police Department, and Palo Alto Police Department, respectively.

Chapter VI contains a data analysis, in which the results from all three case studies are synthesized. The three agencies are compared, drawing distinctions between their methods of communication on Twitter. Patterns in the data between the three agencies suggest a number of tactics that agencies can use to increase their amount of two-way engagement on Twitter.

Conclusions about two-way engagement and its relationship to followership are made in Chapter VII, along with recommendations for law enforcement chief executives. Several specific recommendations for social media managers indicate how they can increase their amount of two-way engagement on Twitter. Lastly, topics for future research are suggested and highlighted.

II. LITERATURE REVIEW

More than 3,500 police agencies in the United States have an account on at least one social media platform.⁵⁶ Agencies are using social media for purposes as varied as routine community event notifications and live, real-time broadcasting of emergency information during crisis events. Over 82 percent of police agencies using social media in 2015 reported using it for “public relations and reputation management.”⁵⁷ With this widespread adoption of social media, scholarly research into how it is being used, both by the public and government agencies, has burgeoned over the past few years. This literature review explores and analyzes that scholarly research, and identifies existing knowledge gaps that warrant further scholarship.

Research pertaining to law enforcement use of social media, especially as it relates to two-way engagement and followership, is varied and can be grouped into three main subareas: the integration of social media into an existing communications strategy, social media usage during crises, and discussion of one-way versus two-way social media communication. These topics often overlap, and are interwoven with two recurring themes: social media’s role in building trust with the community and influencing public perception, and the importance of followership. There is significant room for further study into the relationship between the amount of two-way engagement by police agencies on Twitter and their number of followers, as well as the factors that may mediate or moderate that relationship.

⁵⁶ “Directory,” IACP Center for Social Media, accessed December 15, 2015, www.iacpsocialmedia.org/Directory.aspx.

⁵⁷ IACP, “2015 IACP Social Media Survey,” 5.

A. INTEGRATING SOCIAL MEDIA INTO AN EXISTING COMMUNICATION STRATEGY

“Captured!!”⁵⁸

So started a tweet sent by the Boston Police Department on April 19, 2013, announcing the arrest of the outstanding suspect from the Boston Marathon bombing. In the immediate aftermath of the bombing, and in the days that followed, the public had turned to the Boston Police Department’s Twitter account for accurate, real-time updates; their follower count rose from about 40,000 before the bombing to more than 300,000 on April 19.⁵⁹ It was a watershed moment for law enforcement’s use of social media as a crisis communications tool; indeed, according to a current New York Police Department social media manager, the Boston Police Department had “accomplished what no police department [had] done before: led conversation with citizens in a time of crisis.”⁶⁰

Social media is changing the way society communicates, and law enforcement agencies must adapt their communications strategies to incorporate it. According to an October 2015 study from the Pew Research Center, 65 percent of all American adults (*all* adults, not just those who use the Internet) use social networking sites.⁶¹ Social media is no longer just for the younger generation; while 90 percent of Americans between ages 18 and 29 use it, so do 35 percent of those 65 or older.⁶² Social media is not used only in big cities, either: 58 percent of rural residents, 68 percent of suburban residents, and 64 percent of urban residents in America report using it.⁶³ As of August 2015, 85 percent of American adults used the Internet, while 67 percent had smartphones.⁶⁴ With regards to

⁵⁸ Boston Police Department, “Boston Police Dept. on Twitter,” Twitter.com, last modified April 19, 2013, <https://twitter.com/bostonpolice/status/325413032110989313>.

⁵⁹ Edward F. Davis III, Alejandro A. Alves, and David Alan Sklansky, “Social Media and Police Leadership: Lessons from Boston,” *New Perspectives in Policing* (March 2014): 5.

⁶⁰ Yael Bar-Tur, “Boston Police Schooled Us All on Social Media,” *Mashable*, last modified April 22, 2013, <http://mashable.com/2013/04/22/boston-police-social-media/>.

⁶¹ Andrew Perrin, “Social Media Usage: 2005–2015,” Pew Research Center, last modified October 8, 2015, 2, <http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/>.

⁶² Perrin, “Social Media Usage,” 3.

⁶³ *Ibid.*

⁶⁴ Maeve Duggan, “Mobile Messaging and Social Media 2015,” Pew Research Center, last modified August 19, 2015, 3, <http://www.pewinternet.org/2015/08/19/the-demographics-of-social-media-users/>.

Twitter specifically, 20 percent of the entire American adult population uses the site to some degree, though it is more popular with younger adults (30 percent of online adults under 50 use the site, compared to 11 percent of online adults over 50).⁶⁵ Twitter is also the third most-likely social media platform to be accessed on a daily basis by its users, with 38 percent of its users signing in every day (compared to 70 percent for Facebook and 59 percent for Instagram).⁶⁶

With this broad level of social media adoption throughout the population, the Internet can still be a dangerous place for police agencies. *Cop Watch* writer Hans Toch found that the Internet can become a “clamorous chorus,” a place where the “volume and intensity” of the public’s response makes it “impossible for a police department...to ignore.”⁶⁷ Ignoring the public on social media was, in fact, exactly what the Ferguson Police Department in Missouri had done prior to the shooting of Michael Brown.⁶⁸ The National Information Officers Association (NIOA) found that the police in Ferguson chose to address the crisis with a “classically appropriate press strategy in 1994,” but in 2014, everything they said in their initial news conference (held almost a full day after the shooting), “was already irrelevant” as a result of the public’s social media use, and “the storytelling battle was already lost.”⁶⁹ The NIOA article urges police executives to re-examine their legacy media strategies in light of the social media era, arguing that “principles of personal contact, respecting news cycles, ensuring accuracy, and pleas for patience and trust to the public” are no longer relevant.⁷⁰ If police agencies do not embrace social media to release information promptly in a crisis, according to the NIOA, “the job will be done for you. And you won’t like the results.”⁷¹

⁶⁵ Duggan, “Mobile Messaging,” 15.

⁶⁶ *Ibid.*, 16.

⁶⁷ Hans Toch, *Cop Watch: Spectators, Social Media, and Police Reform* (Washington, DC: American Psychological Association, 2012): 88.

⁶⁸ United States Department of Justice, *After-Action Assessment*, 100.

⁶⁹ Joel F. Shults, “Social Breakdown: How Outdated Police Media Strategy Lost the Twitter-verse in Ferguson,” *NIOA News* 11, no. 5 (2014): 1.

⁷⁰ Shults, “Social Breakdown,” 1.

⁷¹ *Ibid.*

The U.S. Department of Justice’s formal study of the police response to the Ferguson demonstrations concluded that the involved police agencies’ failure to effectively use social media to their advantage contributed to the problems.⁷² The after-action assessment noted, “If law enforcement does not provide needed information, others will fill that void with their own versions of events, motives, and attitudes.”⁷³ Had the involved police agencies used social media effectively to broadcast information, the report suggested, it could have “mitigated the crowd’s confusion and anger.”⁷⁴ Law enforcement could have used social media to correct misinformation that was circulating about events, post accurate and factual information, ask for information from the public, and respond to the public’s questions.⁷⁵

The U.S. Department of Homeland Security’s *Emergency Support Function 15: Standard Operating Procedures* (ESF 15) includes an annex entirely dedicated to social media. Taking lessons learned from recent high-profile crisis events—such as the BP oil spill, the Fukushima nuclear disaster, Hurricane Sandy, and the Boston Marathon bombing—Annex R of ESF 15 is devoted entirely to procedures surrounding the government use of digital media (such as websites and mobile apps) and social media.⁷⁶ The guide states that social media platforms “are effective tools to advise and inform the public if used in a coordinated, strategic, and timely manner, and should be used in concert with other non-digital communication channels.”⁷⁷ It mentions that agencies should respond to questions and inquiries from social media users (i.e., engage in two-way communication), or direct them to the appropriate agency to obtain an answer.⁷⁸ The

⁷² United States Department of Justice, *After-Action Assessment*, 93.

⁷³ *Ibid.*, 102.

⁷⁴ *Ibid.*

⁷⁵ *Ibid.*

⁷⁶ United States Department of Homeland Security, *Emergency Support Function 15: Standard Operating Procedures* (Washington, DC: U.S. Department of Homeland Security, 2006): 1.

⁷⁷ United States Department of Homeland Security, *Emergency Support Function 15*, R-1.

⁷⁸ *Ibid.*, R-2.

guide also notes that the most important part of any social media operation is the posting of “important, accurate, and timely content.”⁷⁹

While Annex R of ESF 15 codifies the significance of government agencies’ social media use, studies have also pointed out the conflict its use presents with the tenets of the National Incident Management System (NIMS). In a 2012 journal article, Hughes and Palen argued that the NIMS structure is not receptive to social media, saying that it “often prevents participation in the rapidly evolving public conversation about an event.”⁸⁰ Hughes and Palen specifically mention that the NIMS requires incident commanders to approve “all messages released to the public,” and touts formal press releases, to which “the abbreviated, informal style of social media does not easily transfer.”⁸¹ They also report that emergency management PIOs interviewed for their study credited the use of social media (i.e., sending updates about an incident) with reducing the number of inquiries from the press.⁸²

Multiple studies discuss the need for a policy to guide an agency’s social media use. In a Naval Postgraduate School thesis from 2013, for example, graduate student Tamara Spicer discussed the importance of having a social media policy to guide public communications during a disaster, and argued that there was a disparity between the expectations for PIOs and the policy guidance they are given; she goes on to provide a sample policy template that agencies (including law enforcement) could use to build a social media policy framework.⁸³ Spicer writes that although emergency response agencies have generally been slow to adopt social media, it is incumbent on government to learn how to use them properly to support their communities.⁸⁴ The Ferguson after-action assessment from the U.S. Department of Justice also stressed the importance of a

⁷⁹ Ibid., R-3.

⁸⁰ Amanda L. Hughes and Leysia Palen, “The Evolving Role of the Public Information Officer: An Examination of Social Media in Emergency Management,” *Journal of Homeland Security and Emergency Management* 9, no. 1 (January 2012): 6, doi: [10.1515/1547-7355.1976](https://doi.org/10.1515/1547-7355.1976).

⁸¹ Hughes and Palen, “Evolving Role,” 2, 3.

⁸² Ibid., 9.

⁸³ Tamara L. Spicer, “Being Social: Integrating Social Media into Public Information Support to Emergence Response #smem” (Master’s thesis, Naval Postgraduate School, 2013), v.

⁸⁴ Spicer, “Being Social,” 5.

solid foundation, noting that “the ability to respond to an incident effectively is formulated long before an incident occurs through investments in leadership community engagement, training, and communication.”⁸⁵ The takeaway here, both from Spicer’s work and the Ferguson study, is that police agencies cannot wait for a crisis to happen and expect to suddenly launch an effective social media program.

A number of sources discuss how social media transforms the way an agency has to communicate with the public. Spicer addresses the paradigm shift from a working hours perspective, observing that social media requires “constant monitoring” during around-the-clock emergencies, both to respond to questions and monitor what the public is saying about an event.⁸⁶ Indeed, a common criticism after crisis events is that authorities were “slow, inaccurate, or inconsistent in informing the public.”⁸⁷ Tobias writes that the public expects to receive information “immediately and directly, bypassing traditional media outlets.”⁸⁸ Similarly, Lieberman, Koetzle, and Sakiyama note that social media gives police departments control over how information is released to the public, which “may be able to minimize distortion associated with crime reporting in traditional media outlets.”⁸⁹ Westerman et al. proved that, the more frequently information is updated on Twitter, the higher credibility it receives from users, showing that government agencies must have an active presence and send information frequently.⁹⁰

In 2010, Copitch and Fox studied the potential for social media to improve the public’s confidence in police. They recognized that a communication plan that involves social media will give police agencies the chance to reach new parts of their community,

⁸⁵ United States Department of Justice, *After-Action Assessment*, xx.

⁸⁶ *Ibid.*, xiv.

⁸⁷ Pauliina Palttala et al., “Communication Gaps in Disaster Management: Perceptions by Experts from Governmental and Non-Governmental Organizations,” *Journal of Contingencies and Crisis Management* 20 (2012): 5, doi: [10.1111/j.1468-5973.2011.00656.x](https://doi.org/10.1111/j.1468-5973.2011.00656.x).

⁸⁸ Tobias, “Using Twitter,” 219.

⁸⁹ Joel D. Lieberman, Deborah Koetzle, and Mari Sakiyama, “Police Departments’ Use of Facebook: Patterns and Policy Issues,” *Police Quarterly* 16, no. 4 (2013): 439, doi: [10.1177/1098611113495049](https://doi.org/10.1177/1098611113495049).

⁹⁰ David Westerman, Patric R. Spence, and Brandon Van Der Heide, “Social Media as Information Source: Recency of Updates and Credibility of Information,” *Journal of Computer-Mediated Communication* 19 (2014): 180. doi: [10.1111/jcc4.12041](https://doi.org/10.1111/jcc4.12041).

and in so doing, develop “strategies that are more genuinely interactive and participative, thus supporting meaningful community engagement.”⁹¹ Most of the messaging done on social media by law enforcement agencies, at least as of 2010, was primarily one-way communication; the authors wondered, by not utilizing two-way communication, if these early social media initiatives were “missing the point.”⁹²

Ruddell and Jones, in 2013, studied citizens in a Canadian city to determine if the police department’s Twitter account and website affected public perception of police. While the sample size was small and limited to one city, they found that people who accessed the police website or Twitter feed had higher levels of confidence in the department.⁹³ Ruddell and Jones also pointed out that social media tools are appealing for law enforcement due to their “relatively low direct costs of development,” especially in a resource-constrained environment.⁹⁴ In a somewhat similar theme, Warren, Sulaiman, and Jaafar studied Malaysian citizens who used Facebook in 2014 to see if social media impacted their opinions toward institutions. They determined that using social media for engagement led to an increase in trust, and that it can instill public confidence in the government.⁹⁵ While investigating if publishing online crime maps in the United Kingdom had an impact on civic engagement, Chainey and Tompson determined that social media technologies actually offered a better way to promote interaction between the police and the citizens.⁹⁶

In a 2013 study of public affairs program managers in Australian police organizations, Lee and McGovern learned that law enforcement encounters with the

⁹¹ Copitch and Fox, “Using Social Media,” 45.

⁹² Ibid.

⁹³ Rick Ruddell and Nicholas Jones, “Social Media and Policing: Matching the Message to the Audience,” *Safer Communities* 12, no. 2 (2013): 68, doi: [10.1108/17578041311315030](https://doi.org/10.1108/17578041311315030).

⁹⁴ Ruddell and Jones, “Social Media and Policing,” 65.

⁹⁵ Anne Marie Warren, Ainin Sulaiman, and Noor Ismawati Jaafar, “Social Media Effects on Fostering Online Civic Engagement and Building Citizen Trust and Trust in Institutions,” *Government Information Quarterly* 31, no. 2 (April, 2014): 291, 300, doi: [10.1016/j.giq.2013.11.007](https://doi.org/10.1016/j.giq.2013.11.007).

⁹⁶ Spencer Chainey and Lisa Tompson, “Engagement, Empowerment and Transparency: Publishing Crime Statistics Using Online Crime Mapping,” *Policing* 6, no. 3 (2012): 237, doi: [10.1093/police/pas006](https://doi.org/10.1093/police/pas006).

public on social media helped to build trust.⁹⁷ They discussed how some command-level officers use Facebook to communicate with the public, which opens the possibility for two-way engagement. Lee and McGovern wonder if this two-way “mode of interaction” will “result in more trust being conferred to the police” than simple one-way communication, but the study does not attempt to measure this.⁹⁸ The public affairs managers they interviewed saw social media as a visible way to improve their agency’s public image, improve trust, and increase law enforcement efforts’ effectiveness.⁹⁹

Mergel and Bretschneider, also in 2013, repeatedly address the importance of two-way communication in their journal article.¹⁰⁰ Mergel (whose 2012 book also describes the use of social media in the public sector) and Bretschneider define the three stages through which a government agency moves when establishing a formal social media presence—the first stage is informal experimentation, the second stage brings a need to draft policies and procedures, and the third stage is a formalized strategy and policy implementation.¹⁰¹ They also discuss the two approaches to social media engagement, writing that “interactions on social media channels are bidirectional, allowing for frequent back-and-forth communication between agency representatives and the public.”¹⁰² While the one-way communication model is a “push” of information “in a broadcasting mode without allowing direct interaction,” the two-way communication model allows for a “constant stream of feedback and ongoing conversation with and among those members of the public who prefer information interaction instead of formalized contact.”¹⁰³ They discuss how an agency can move from the experimentation phase through the formalized program phase, where the end goal is the

⁹⁷ Murray Lee and Alyce McGovern, “Force to Sell: Policing the Image and Manufacturing Public Confidence,” *Policing & Society* 23, no. 2 (2013): 114, doi: [10.1080/10439463.2011.647913](https://doi.org/10.1080/10439463.2011.647913).

⁹⁸ Lee and McGovern, “Force to Sell,” 115.

⁹⁹ *Ibid.*, 120.

¹⁰⁰ Ines Mergel and Stuart I. Bretschneider, “A Three-Stage Adoption Process for Social Media Use in Government,” *Public Administration Review* 73 (2013): 390–400, doi: [10.1111/puar.12021](https://doi.org/10.1111/puar.12021).

¹⁰¹ Mergel and Bretschneider, “A Three-Stage Adoption,” 390.

¹⁰² *Ibid.*, 391.

¹⁰³ *Ibid.*

“institutionalization of innovative social media practices.”¹⁰⁴ This can include the creation of social media director positions, or even the creation of entire specialized social media units.¹⁰⁵

Sutton et al. conducted a detailed study in 2014 on the use of government agencies’ Twitter use during a wildfire in Colorado Springs. They examined factors that predict retweets (what they term “serial transmission”) and the role that “thematic content, message style, and changes in number of Followers” have on retweeting behavior.¹⁰⁶ The act of retweeting, which is essentially forwarding another user’s tweet to one’s own followers, is a way of “amplifying messages.”¹⁰⁷ The study found that “tweets that include content that is hazard-related” are more likely to be retweeted than others, as are tweets that use “imperative sentences to provide direct guidance.”¹⁰⁸ Tweets that contain a URL are not more likely to be retweeted than others.¹⁰⁹ This is an important study for law enforcement social media managers, as it made concrete suggestions about what factors in a tweet’s composition are most likely to be retweeted. Sutton et al. write that “practitioners, who may endeavor to reach wide audiences with critical information, are likely to have an interest in tweeting messages that have both a high chance of being retweeted by others and [that] reach a diverse set of other users who were not previously exposed directly to their initial message.”¹¹⁰ This study did not, however, examine two-way communication or its effect on followership, nor was it focused exclusively on law enforcement Twitter accounts.

Lastly, other sources examined how to expand the use of social media into new governmental frontiers. For example, in a 2012 Naval Postgraduate School master’s

¹⁰⁴ Ibid., 395.

¹⁰⁵ Ibid.

¹⁰⁶ Jeannette Sutton et al., “Warning Tweets: Serial Transmission of Messages During the Warning Phase of a Disaster Event,” *Information, Communication and Society* 17, no. 6 (July 2014): 765, doi: [10.1080/1369118X.2013.862561](https://doi.org/10.1080/1369118X.2013.862561).

¹⁰⁷ Sutton et al., “Warning Tweets,” 766.

¹⁰⁸ Ibid., 778, 783.

¹⁰⁹ Ibid., 779.

¹¹⁰ Ibid., 768.

thesis, homeland security expert Lynda Peters recommended that social media be integrated into the nationwide suspicious activity reporting initiatives, though she cautioned that “agencies must dedicate the personnel necessary to monitor received information, vet it to address quality and accuracy concerns, and provide feedback to encourage further public engagement efforts.”¹¹¹ In 2013, Dawson, Hill, and Bank envisioned the military creating “social media monitoring and response teams” to assist with domestic disasters in humanitarian-assistance/disaster-response efforts.¹¹² Such teams would be staffed with information technology or communications personnel as a collateral duty assignment.¹¹³

B. SOCIAL MEDIA USAGE DURING CRISES

A major subarea of scholarship has focused on the use of social media during crisis events by varying groups, such as the general public, the media, and the government. For purposes of this literature review, research conducted from 2010 onward was examined, and was rich with examples taken from all over the world.¹¹⁴ Most of these studies are narrow in focus, choosing to survey a single crisis event (such as an earthquake, a flood, a riot, or a major fire) and typically a single social media platform (such as Twitter or Facebook), most commonly during a narrow timeframe (such as a matter of days or weeks after the event).

Government agencies have been using social media during crises for some time now. The federal government “relied extensively” on social media for the first time during its response to the massive Haitian earthquake in 2010, as Yates and Paquette reported during their case study of the event.¹¹⁵ And a Federal Emergency Management

¹¹¹ Peters, “Using Social Media,” 37.

¹¹² Douglas Dawson, Steven Hill, and Ryan Bank, “Use Social Media for Crises,” *United States Naval Institute Proceedings* 139, no. 10 (October 2013): 78.

¹¹³ Dawson, Hill, and Bank, “Use Social Media,” 80.

¹¹⁴ 2010 was the year that the IACP Center for Social Media came into existence, and it is widely accepted within law enforcement circles as being the year that social media was broadly adopted by a large number of police agencies.

¹¹⁵ Dave Yates and Scott Paquette, “Emergency Knowledge Management and Social Media Technologies: A Case Study of the 2010 Haitian Earthquake,” *International Journal of Information Management* 31, no. 1 (2011): 6–13.

Agency (FEMA) after-action report on the response to the destructive tornado in Joplin, Missouri, in 2011 noted that the City of Joplin used social media to “communicate emergency information to the public and conduct outreach to support long term recovery.”¹¹⁶ Scholtens, Jorritsma, and Helsloot also make basic points about how to handle disaster communications, stressing the importance of timely information dissemination during a crisis, and explaining that social media is one way to achieve this.¹¹⁷

One example of a police agency’s prudent social media use during a crisis is detailed in a report by the Police Executive Research Forum on the riots in Baltimore in April and May 2015 following the death of in-custody prisoner Freddie Gray. The report highlighted how the Baltimore Police Department made “extensive use” of its social media channels during the aftermath of the incident “to provide updates on the demonstrations, to respond (as much as possible) to rumors or false statements, and to demonstrate transparency in disseminating information.”¹¹⁸ The agency posted their press conference video on their YouTube channel, and used their Twitter account to point followers to the video.¹¹⁹ Their use of social media was “effective at getting clear and accurate information to large numbers of people,” and the public chose to turn to the police department as a source of official information.¹²⁰ The agency’s Twitter followership alone increased by more than 50 percent during the unrest, from about 80,000 followers to 126,000.¹²¹ The report noted that Twitter in particular is helpful to distribute messages widely, and that traditional media outlets considered police tweets an official source of information.¹²² Because the Baltimore Police Department used social

¹¹⁶ Federal Emergency Management Agency, *The Response to the 2011 Joplin, Missouri, Tornado Lessons Learned Study* (Washington, DC: FEMA, 2011), 3.

¹¹⁷ Astrid Scholtens, Jan Jorritsma, and Ira Helsloot, “On the Need for a Paradigm Shift in the Dutch Command and Information System for the Acute Phase of Disasters,” *Journal of Contingencies and Crisis Management*, 22 (2014): 40, doi: [10.1111/1468-5973.12035](https://doi.org/10.1111/1468-5973.12035).

¹¹⁸ PERF, *Lessons Learned*, 65.

¹¹⁹ *Ibid.*

¹²⁰ *Ibid.*, 66.

¹²¹ *Ibid.*

¹²² *Ibid.*

media to broadcast information quickly, reporters monitored the agency's accounts and received the latest available information instantaneously.¹²³

A 2015 study by Houston et al. sparked the development of a framework for social media use in disaster response. They note that anyone following official accounts can receive disaster warnings directly, and that people who do not follow official accounts still may see the warnings if someone in their network shares them.¹²⁴ As a result, the warnings carry more value to a wider population, as the agency's messages can "propagate through online social networks."¹²⁵

Police agencies in Australia certainly understood this potential when they began to create their social media accounts. In a case study by the Queensland Police Service on how social media use after devastating floods in December 2010, they noted that two of their three aims in creating their accounts just seven months before the floods were to "engage in a two-way conversation" with the public, and to "develop an online community of followers before a disaster occurred."¹²⁶ As the floods occurred, the department "instinctively gravitated" to social media because it was "clearly the fastest and best way to distribute important public safety information," and was "the vehicle to reach the public and the media in the shortest timeframe."¹²⁷ The department monitored their accounts around the clock, responding to inquiries from the public whenever possible.¹²⁸ Social media allowed the Queensland Police Service to broadcast information widely, "ensuring there was no vacuum of official information," and also enabled them to give that information directly to the public so people did not have to

¹²³ Ibid.

¹²⁴ J. Brian Houston et al., "Social Media and Disasters: A Functional Framework for Social Media Use in Disaster Planning, Response, and Research," *Disasters* 39 (January, 2015): 9, doi: [10.1111/disa.12092](https://doi.org/10.1111/disa.12092).

¹²⁵ Houston et al., "Social Media and Disasters," 9.

¹²⁶ Queensland Police Service, *Disaster Management and Social Media: A Case Study* (Brisbane, Australia: Queensland Police Service) accessed November 17, 2015 ii, <https://www.police.qld.gov.au/corporatedocs/reportsPublications/other/Documents/QPSSocialMediaCaseStudy.pdf>.

¹²⁷ Queensland Police Service, *Disaster Management*, v, iv.

¹²⁸ Ibid., v.

“rely on mainstream media coverage.”¹²⁹ With social media, the agency also “killed rumour and misreporting before it became ‘fact’ in the mainstream media,” specifically by using the #mythbuster hashtag.¹³⁰ They reported that the mainstream media outlets relied so much on their social media feeds that their tweets would be “read out by radio station announcers within moments” of publication.¹³¹ The agency recommended using social media as a two-way engagement tool, “to receive feedback and involve your online community” in disaster response.¹³²

Bird, Ling, and Haynes conducted community surveys in 2012 to examine Facebook use by various organizations during the Queensland floods, and found that the government’s Facebook page got the highest across-the-board marks in being accurate, up-to-date, useful, and trustworthy.¹³³ The government’s Facebook page was ranked higher by survey respondents in those categories, on average, than Facebook pages run by the community or the media, or websites run by the community, the government, or the media.¹³⁴ Olsson also mentioned the Queensland floods in a 2014 article, pointing out that the Queensland Police Service had a remarkable 1.3 million Twitter followers during the crisis.¹³⁵ The Queensland Police Service, Olsson writes, “altered their communication approach from a transmission mode, which relied upon traditional press releases, to an audience mode of communication that emphasized dialogue.”¹³⁶ As a result, the public viewed the agency as a highly credible information source; Olsson determined that the Queensland Police Service was the most retweeted Twitter account during the floods.¹³⁷

¹²⁹ Ibid., vi.

¹³⁰ Ibid.

¹³¹ Ibid., v.

¹³² Ibid., vii.

¹³³ Deanne Bird, Megan Ling, and Katharine Haynes, “Flooding Facebook: The Use of Social Media During the Queensland and Victorian Floods,” *Australian Journal of Emergency Management* 27, no. 1 (2012): 31.

¹³⁴ Bird, Ling, and Haynes, “Flooding Facebook,” 31.

¹³⁵ Eva-Karin Olsson, “Crisis Communications in Public Organisations: Dimensions of Crisis Communication Revisited,” *Journal of Contingencies and Crisis Management* 22 (2014): 115, doi: [10.1111/1468-5973.12047](https://doi.org/10.1111/1468-5973.12047).

¹³⁶ Olsson, “Crisis Communications,” 122.

¹³⁷ Ibid., 118.

The use of social media in the aftermath of the massive 2011 earthquake and ensuing tsunami and nuclear disaster in Japan has been widely studied by multiple researchers. In 2014, Jung and Moro identified social media as a platform where citizens went for information after the catastrophe; 53 percent of social media users on the day of the earthquake accessed their accounts for information about what was happening.¹³⁸ These users became active participants in the distribution of information, by “assessing the trustworthiness of news items and making decisions about retweeting the news to their micro- and meso-level networks.”¹³⁹ Indeed, one newspaper article from 2011 described Twitter as “indispensable” during the crisis, and in fact “cemented Twitter’s relevancy in a country famously tough to crack for foreign-born social media companies.”¹⁴⁰

Cho, Jung, and Park specifically studied the use of Twitter in the forty hours following the Japanese earthquake, and conducted a content and URL analysis of all tweets sent by all Twitter users in Japan. Twitter was especially important in the Japanese case because it became “an alternative beyond that of a supplementary communication channel”; no phone services were functional after the earthquake, but social media sites could still be accessed through mobile devices.¹⁴¹ They found that while the populace may have successfully used Twitter, the government did not. There were no government Twitter accounts in place prior to the earthquake; immediately after it, however, the government launched accounts.¹⁴² These accounts quickly gained a broad followership, which showed that the public “was interested in obtaining official information” from the government.¹⁴³ Yet the Twitter conversation in Japan was “led by peer-to-peer

¹³⁸ Joo-Young Jung and Munehito Moro, “Multi-Level Functionality of Social Media in the Aftermath of the Great East Japan Earthquake,” *Disasters* 38 (July 2014): S136, doi: [10.1111/disa.12071](https://doi.org/10.1111/disa.12071).

¹³⁹ Jung and Moro, “Multi-Level Functionality,” S137.

¹⁴⁰ Patrick Winn, “Japan Tsunami Disaster: As Japan Scrambles, Twitter Reigns,” *Global Post*, March 18, 2011, <http://www.globalpost.com/dispatch/news/regions/asia-pacific/japan/110318/twitter-japan-tsunami>.

¹⁴¹ Winn, “Japanese Tsunami Disaster,” 28.

¹⁴² Seong Eun Cho, Kyujin Jung, and Han Woo Park, “Social Media Use during Japan’s 2011 Earthquake: How Twitter Transforms the Locus of Crisis Communication,” *Media International Australia Incorporating Culture and Policy* 149 (November 2013): 33.

¹⁴³ Cho, Jung, and Park, “Social Media Use,” 37.

communication” that relied on “peer-generated information,” not the government.¹⁴⁴ The government, Cho et al. described, adopted a one-way communication model on Twitter, and this “passive behaviour towards information distribution...implies that it adopted an inappropriate crisis-communication strategy.”¹⁴⁵

Li, Vishwanath, and Rao also conducted a Twitter-specific study of the Japanese earthquake, yielding similar findings. They determined that government sources, while sending more tweets of a “reassuring” nature than regular citizens, were actually retweeted less often, “signifying their loss of influence.”¹⁴⁶ A retweet is important, they write, as it implies that at least one follower “viewed the information as important enough to want to share it,” which shows that retweets can be illustrative of the citizenry’s mood.¹⁴⁷ The government’s voice on Twitter was eventually “either drowned out or ignored by the Twitter community,” as measured by the number of retweets.¹⁴⁸ The traditional media, on the other hand, was often retweeted.¹⁴⁹ In a separate study, Acar and Muraki found a single often-retweeted government Twitter account that was sending emergency evacuation instructions during the tsunami.¹⁵⁰ With that said, though, some survey respondents in Acar and Muraki’s study “blamed the government for not sharing information which left greater room for rumours.”¹⁵¹ Respondents also decried a lack of standardized hashtags throughout the disaster to help users find topical information.¹⁵²

Palen et al., in 2010, conducted a content analysis of 20,000 tweets sent in the aftermath of the 2009 flooding in the Red River Valley area in North Dakota and

¹⁴⁴ Ibid., 28.

¹⁴⁵ Ibid., 38.

¹⁴⁶ Jessica Li, Arun Vishwanath, and H. R. Rao, “Retweeting the Fukushima Nuclear Radiation Disaster,” *Association for Computing Machinery: Communications of the ACM* 57, no. 1 (January 2014): 78, doi: [10.1145/2500881](https://doi.org/10.1145/2500881).

¹⁴⁷ Li, Vishwanath, and Rao, “Retweeting Fukushima,” 80.

¹⁴⁸ Ibid., 84.

¹⁴⁹ Ibid.

¹⁵⁰ Adam Acar and Yuya Muraki, “Twitter for Crisis Communication: Lessons Learned from Japan’s Tsunami Disaster,” *International Journal of Web Based Communities* 7, no. 3 (2011): 396, doi: [10.1504/IJWBC.2011.041206](https://doi.org/10.1504/IJWBC.2011.041206).

¹⁵¹ Acar and Muraki, “Twitter for Crisis Communication,” 398.

¹⁵² Ibid., 399.

Minnesota. They concluded that the behavior of retweeting “acts as an information recommendation service about which information is valuable.”¹⁵³ They suggest that honing in on retweeted information during a crisis can be important.¹⁵⁴ Kongthon et al. had a similar finding in a study on Twitter use following a 2011 flood in Thailand, inferring that accounts that received more retweets were perceived as more “credible” as a result.¹⁵⁵ In that crisis, the main source of information on Twitter came from citizens, not government organizations.¹⁵⁶

Chatfield, Scholl, and Brajawidagda studied government agencies’ Twitter use in Indonesia after the 2012 Northern Sumatra earthquake. One government Twitter account providing emergency information was retweeted by a major television station’s Twitter account, helping that message reach more than 2.8 million people in less than two minutes.¹⁵⁷ This tweet provided the public with almost nine minutes of advance notice to evacuate coastal areas before a tsunami struck.¹⁵⁸ The broad reach of government warning tweets was attributed to the retweets they received from their follower network; one such tweet reached more than 4 million people within 15 minutes of being sent, and included a map showing the hazardous area.¹⁵⁹ Chatfield et al. write that the reach of the government’s tweets would have been “significantly less without citizens’ direct participation in re-tweeting.”¹⁶⁰ Many lives were potentially saved by “the combined collaborative efforts of government and networked citizens”; the retweets from highly followed traditional media Twitter accounts contributed to the speed of the information

¹⁵³ Leysia Palen et al., “Twitter-Based Information Distribution during the 2009 Red River Valley Flood Threat,” *Bulletin of the American Society for Information Science and Technology (Online)* 36, no. 5 (June 2010): 16, doi: [10.1002/bult.2010.1720360505](https://doi.org/10.1002/bult.2010.1720360505).

¹⁵⁴ Palen et al., “Twitter-Based Information,” 16.

¹⁵⁵ Alisa Kongthon et al., “The Role of Social Media during a Natural Disaster: A Case Study of the 2011 Thai Flood,” *International Journal of Innovation and Technology Management* 11, no. 3 (June 2014): 9, doi: [10.1142/S0219877014400124](https://doi.org/10.1142/S0219877014400124).

¹⁵⁶ Kongthon et al., “Role of Social Media,” 8.

¹⁵⁷ Akemi Takeoka Chatfield, Hans J. Scholl, and Uuf Brajawidagda, “Tsunami Early Warnings via Twitter in Government: Net-Savvy Citizens’ Co-Production of Time-Critical Public Information Services,” *Government Information Quarterly* 30, no. 4 (October 2013): 382, doi: [10.1016/j.giq.2013.05.021](https://doi.org/10.1016/j.giq.2013.05.021).

¹⁵⁸ Takeoka, Scholl, and Brajawidagda, “Tsunami Early Warnings,” 382.

¹⁵⁹ *Ibid.*, 377, 380.

¹⁶⁰ *Ibid.*, 377.

dissemination.¹⁶¹ Their study concluded that government social media programs needed to foster “a culture of close collaboration with net-savvy citizens with the power of social influence on their fellow citizens,” since this can exponentially increase the reach of government information in a crisis situation.¹⁶² While not addressing two-way communication at all, this research does illustrate that the more followers a Twitter account has, the more people are initially exposed to that account’s message and can then choose to retweet it. This is one reason the importance of followers cannot be underestimated.

Helsloot and Groenendaal also touted the importance of followers in a 2013 report following a major fire in the Netherlands. Two city government accounts were “virtually invisible” during the crisis—their messaging was lost in the sheer volume of tweets about the incident.¹⁶³ The authors concluded that it was “very unlikely” someone would have read the government’s tweets were they not a follower of the government accounts.¹⁶⁴ The “limited number of followers” on these accounts “contributed to their invisibility.”¹⁶⁵ As a result, the authors suggest, “If the government aims to play a larger role on Twitter, extending a network with followers is essential to be able to actually stand out during a sudden crisis.”¹⁶⁶ They also noted that the police agency accounts only used one-way communication, and did not answer citizens’ tweeted questions.¹⁶⁷

Wukich and Steinberg, in their 2013 study of Twitter use during American crisis events, pointed out that since government agencies often do not have many Twitter

¹⁶¹ Ibid., 384, 383.

¹⁶² Ibid., 385.

¹⁶³ Ira Helsloot and Jelle Groenendaal, “Twitter: An Underutilized Potential during Sudden Crises,” *Journal of Contingencies and Crisis Management* 21, no. 3 (September 2013): 178, doi: [10.1111/1468-5973.12023](https://doi.org/10.1111/1468-5973.12023).

¹⁶⁴ Helsloot and Groenendaal, “Twitter,” 181.

¹⁶⁵ Ibid., 182.

¹⁶⁶ Ibid.

¹⁶⁷ Ibid., 181.

followers, their pool of potential retweeters is limited.¹⁶⁸ Similarly, Sutton et al. discussed the importance of building a follower base before a crisis, since the more followers an agency has, the more initial exposure their tweets will receive, which will lead to greater retweet potential.¹⁶⁹ The standard operating procedures for the U.S. Department of Homeland Security's ESF 15 note that agencies should use existing, pre-established social media accounts during a crisis, specifically because they have an existing group of followers who are used to receiving messages from them.¹⁷⁰

Wukich and Steinberg also researched how government agencies and non-profit organizations handled four separate crisis events on Twitter. They preliminarily found that government agencies did not use social media as effectively as they could and missed opportunities "to promote information exchange."¹⁷¹ Their primary example was the "lack of coordination" with the proper use of disaster-related hashtags, which prevented government messages from being amplified outside of their follower base.¹⁷² Wukich and Steinberg wrote, "Despite the somewhat active role of government and nonprofits on Twitter during extreme events, their role in hashtag networks appears quite limited."¹⁷³ This shows that having a good understanding of best practices in tweet composition and hashtag use can help an agency's message reach a broader recipient base.

Sutton et al. conducted a detailed study on government Twitter accounts following the Boston Marathon bombing in 2013, and recommended some best practices for agencies using the platform during a crisis. They write that Twitter is an "important channel for message dissemination because it includes opportunities for networked message amplification, or retransmission, among online communicators under conditions

¹⁶⁸ Clayton Wukich and Alan Steinberg, "Nonprofit and Public Sector Participation in Self-Organizing Information Networks: Twitter Hashtag and Trending Topic Use during Disasters," *Risks, Hazards & Crisis in Public Policy* 4, no. 2 (June 2013): 89, doi: [10.1002/rhc3.12036](https://doi.org/10.1002/rhc3.12036).

¹⁶⁹ Sutton et al., "Warning Tweets," 782.

¹⁷⁰ United States Department of Homeland Security, *Emergency Support Function 15*, R-2.

¹⁷¹ Wukich and Steinberg, "Nonprofit and Public Sector," 84.

¹⁷² *Ibid.*, 84, 86.

¹⁷³ *Ibid.*, 102.

of threat.”¹⁷⁴ The authors examined government tweets’ retweet rates, finding that tweets containing hazard impact information, advisory information, or emotive/evaluative content (which they defined as tweets that “provided encouragement or restored confidence”) were all more likely to be retweeted than tweets containing messages of thanks or information about road closures.¹⁷⁵ Tweets written in all capital letters had 85 percent more retweets than those that were not.¹⁷⁶ Additionally, they found that tweets directed at a single individual (i.e., a “reply” tweet) received 91 percent fewer predicted retweets than “original” tweets, and tweets containing a URL received 36 percent fewer predicted retweets than those did not.¹⁷⁷ Importantly, Sutton et al. found that the number of followers a Twitter account has is “significantly related” to the number of retweets it receives.¹⁷⁸ In fact, they found that doubling the number of followers increases retweets by a factor of about 5.67; they note that this is an “extremely powerful effect,” since accounts with many followers receive more exposure due not only to their initial follower base, but also to the likelihood of increased retweets.¹⁷⁹ They conclude that increasing the number of followers can be “extremely valuable,” as high follower numbers are “crucial for amplification” of messages.¹⁸⁰

Overall, the literature in this subarea is helpful to the larger body of research as it tends to suggest smart practices and techniques that government agencies can employ when using social media during and after crisis events, and it shows the importance of a large followership that can receive messages directly in a time of crisis. Law enforcement can employ these smart practices and techniques to communicate more effectively.

¹⁷⁴ Sutton et al., “What it Takes to Get Passed on: Message Content, Style, and Structure as Predictors of Retransmission in the Boston Marathon Bombing Response,” *PLoS One* 10, no. 8 (2015): 4, doi: [10.1371/journal.pone.0134452](https://doi.org/10.1371/journal.pone.0134452).

¹⁷⁵ Sutton et al., “What it Takes,” 12.

¹⁷⁶ *Ibid.*

¹⁷⁷ *Ibid.*

¹⁷⁸ *Ibid.*, 13.

¹⁷⁹ *Ibid.*

¹⁸⁰ *Ibid.*, 16.

C. ONE-WAY COMMUNICATION VERSUS TWO-WAY COMMUNICATION

The third and final major subarea of research addresses one-way communication and two-way communication using social media. While no studies focused exclusively on the benefits of one style of communication over the other, both styles were mentioned repeatedly as part of the broader research. This subarea highlights those findings.

As early as 2008, researchers were noting when government officials were solely focused on a one-way communication strategy. Palen examined the use of social media by officials during wildfires in Southern California in 2007, and found that it was exclusively one-way in nature. Palen writes that this strategy, “which has been historically and conventionally the basis for emergency response, increasingly fails to account of growing forms of backchannel communication—that is, peer-to-peer communications that are not part of the official discourse of the event.”¹⁸¹ She concluded that, in the future, emergency managers must develop procedures for receiving information from the community during crisis events.¹⁸² During these wildfires, the public turned to their peers for the most current information, some of whom became “information brokers” to distribute news.¹⁸³ This is a role the government—not the public—should play.

By 2010, subject-matter experts in the field of law enforcement social media were extolling the value of two-way communication for police agencies. In an article listing nine “steps to success” on social media for police executives, Stevens used one of those nine to ensure that police chiefs recognized Twitter was “two-way,” and required conversations between the police and the public.¹⁸⁴ In a post on her blog, ConnectedCops.net, Stevens provided clear guidance to police agencies on engagement,

¹⁸¹ Leysia Palen, “Online Social Media in Crisis Events,” *Educause Quarterly* 20, no. 3 (2008): 77.

¹⁸² Palen, “Online Social Media,” 78.

¹⁸³ *Ibid.*

¹⁸⁴ Lauri Stevens, “Social Media in Policing: Nine Steps for Success,” *Police Chief* 77, no. 2 (February 2010), http://www.policchiefmagazine.org/magazine/index.cfm?fuseaction=display&article_id=2018&issue_id=22010.

writing, “if they’re tweeting *to* you, answer them...the bottom line is, talk to people.”¹⁸⁵ Stevens also discussed the importance of followership in advance of a crisis, using the analogy of building a nest before needing to roost. She writes, “Engage and build your audience now. It will be there for you when the time comes.”¹⁸⁶

Hsiung, in 2015, observed that the act of replying to a social media follower’s inquiry or comment is not just a response to that individual; rather, since responses are public, it is an opportunity for everyone to see the agency’s answer.¹⁸⁷ He also equated a one-way engagement strategy with a police officer using the public address system on his or her vehicle to make announcements to the public, but keeping the windows rolled up so the public cannot ask clarifying questions.¹⁸⁸ Copitch and Fox found that police agency social media use had the opportunity to shape public opinion on law enforcement, particularly if they make use of its potential as an engagement tool and did not simply “push out” content.¹⁸⁹ In 2013, Janoske, Liu, and Madden studied the habits of 21 crisis communication experts; these experts stressed the importance of listening to the community and being open to receiving information from them.¹⁹⁰ Peters, further, found that police agencies, if using two-way communication, could give the public another way to provide crime information or reports of suspicious activity.¹⁹¹ Two-way communication can also have an impact on officer safety and operational security, as Simon et al. learned when they studied how Twitter was used during a four-day terrorist

¹⁸⁵ Lauri Stevens, “Law Enforcement on Twitter: Five Ways to Kick It up a Notch,” ConnectedCops.Net, last modified July 12, 2010, <http://connectedcops.net/law-enforcement-on-twitter-five-ways-kick-it-up-a-notch/>.

¹⁸⁶ Stevens, “Law Enforcement on Twitter.”

¹⁸⁷ Chris Hsiung, “Social Media Notifications and Engagement: Two Sides of the Same Coin,” *Social Media Beat*, last modified October 17, 2015, blog.iacpsocialmedia.org/Home/tabid/142/entryid/438/Default.aspx.

¹⁸⁸ Hsiung, “Social Media Notifications.”

¹⁸⁹ Copitch and Fox, “Using Social Media,” 46.

¹⁹⁰ Melissa L. Janoske, Brooke Fisher Liu, and Stephanie Madden, “Congress Report: Experts’ Recommendations on Enacting Best Practices in Risk and Crisis Communication,” *Journal of Contingencies and Crisis Management* 21 (2013): 232, doi: [10.1111/1468-5973.12031](https://doi.org/10.1111/1468-5973.12031).

¹⁹¹ Peters, “Using Social Media,” 37.

siege on a Kenyan shopping mall in 2013.¹⁹² In the middle of the attack, they report, the Kenyan police asked a Twitter user to delete a tweet containing pictures of military vehicles about to commence an assault, since the terrorists could have been using that information for intelligence purposes.¹⁹³

Some studies have developed categories to classify various social media communication strategies. One such example came from Crowe, who suggested that the social media engagement styles of emergency management agencies could be dubbed “inactive,” “reactive,” or “proactive.”¹⁹⁴ “Reactive” is essentially one-way communication, and “proactive” is two-way communication. Crowe writes that the proactive style is the “most complicated” way to use social media, requiring time and resources to execute effectively.¹⁹⁵ Lindsay, in a report for the Congressional Research Service on social media use in disasters, came up with two similar categories: “passive” use, or use as an “emergency management tool.”¹⁹⁶ He acknowledged that two-way communication “could potentially alter emergency communication,” going so far to predict that FEMA and emergency managers could eventually use social media as a “supplement” to 9–1–1.¹⁹⁷ Lindsay recognized that the emergency management field should increase its social media use in order to meet public demand.¹⁹⁸

Mergel also has a system of categorizing social media strategies, which she refers to as “push,” “pull,” and “networking.”¹⁹⁹ The push strategy is one-way communication; the pull strategy involves some interaction, but is predominantly used to pull users to a

¹⁹² Tomer Simon et al., “Twitter in the Cross Fire: The Use of Social Media in the Westgate Mall Terror Attack in Kenya,” *PLoS One* 9, no. 8 (August 2014): 8, doi: [10.1371/journal.pone.0104136](https://doi.org/10.1371/journal.pone.0104136).

¹⁹³ Simon et al., citing Daniel Howden on Twitter, accessed September 26, 2013, https://twitter.com/howden_africa/status/381800712193052672.

¹⁹⁴ Crowe, “Social Media Manifesto,” 416.

¹⁹⁵ *Ibid.*

¹⁹⁶ Bruce R. Lindsay, *Social Media and Disasters: Current Uses, Future Options, and Policy Considerations* (CRS Report No. R41987) (Washington, DC: Congressional Research Service, 2011), Introduction.

¹⁹⁷ Lindsay, *Social Media and Disasters*, 4, 5.

¹⁹⁸ *Ibid.*, 5.

¹⁹⁹ Mergel, *Social Media in the Public Sector*, 112.

government website for additional information. The networking strategy is true bidirectional communication, the “highly interactive” style that involves government writing back to the citizens.²⁰⁰ This style creates a “snowballing” effect, in which the two-way content travels through the networks of the citizens’ social media connections.²⁰¹ Mergel recognizes that citizens use social media as creators of content, who can send that information to the government, affording the opportunity for bidirectional, back-and-forth exchanges.²⁰² This enables discussions between the government and its citizens, not simply one-way information delivery.²⁰³ With that said, Mergel recognizes that the syntax and style of online communication is unique, and not something which comports with the “learned, on-the-record, scripted communication style favored by government officials.”²⁰⁴ This contrast in styles can often be a barrier to government adoption of social media interaction.²⁰⁵

Mergel was the only source reviewed for this thesis that mentioned Klout, a private company that produces a score for individual Twitter users based on how influential they are within their social networks. As Mergel describes, Klout measures “a combination of the return on engagement, participation, interaction, and attention” of a user.²⁰⁶ This score is based on Klout’s definition of “engagement,” which is based on the number of tweets a user sends, the amount of retweets he or she receives, and the number of unique users reached based on the number of followers of all retweeting parties.²⁰⁷ While Klout’s method is certainly one way to measure a user’s reach on social media, it does not take into account the user’s amount of two-way engagement in the sense of ongoing, back-and-forth conversation between users.

²⁰⁰ Ibid.

²⁰¹ Ibid., 120

²⁰² Ibid., 12, 14.

²⁰³ Ibid., 31.

²⁰⁴ Ibid., 58.

²⁰⁵ Ibid.

²⁰⁶ Ibid., 135.

²⁰⁷ Ibid., 141.

Other studies have examined one-way versus two-way communication in emergency management disciplines other than law enforcement, with similar results. For example, Sheil, Violanti, and Slusarski studied social media use by American fire departments. They learned that most departments had adopted a one-way strategy, simply using social media as they would more traditional communication channels.²⁰⁸ They found that half or fewer of the agencies were using social media to truly interact with the public.²⁰⁹ Rahm and Reddick, who examined social media use by emergency services districts (fire/EMS) in Texas, had similar findings, writing that it was primarily used as an “alternative traditional delivery service” of information.²¹⁰ They found that the agencies were not using social media “in a way that empowers the public to become a full partner in service delivery at the time of a crisis.”²¹¹ Only 14 percent of survey respondents reported they were using social media as a two-way communication tool.²¹²

Crump examined Twitter use by police agencies in the United Kingdom, and found that it was largely used on a one-way basis as well. While recommendations from the Association of Chief Police Officers encourage openness and two-way engagement between citizens and police on social media, one-way communication “dominates” other forms of content.²¹³ Officers receive guidance from their departments to be “interesting and engaging” on social media in order to prompt the public’s interaction, to respond to questions from followers, and to use multimedia content when possible (pictures, videos, and so forth).²¹⁴ Crump found that officers rarely respond to tweets reporting crimes, since their departments would rather use other established channels to do so.²¹⁵ Crump

²⁰⁸ Sheil, Violanti, and Slusarski, “Explaining Attitudes,” 61.

²⁰⁹ Ibid.

²¹⁰ Dianne Rahm and Christopher G. Reddick, “Information and Communication Technology (ICT) for Emergency Services: A Survey of Texas Emergency Services Districts,” *International Journal of E-Politics* 4, no. 3 (2013): 30, doi: [10.4018/jep.2013070103](https://doi.org/10.4018/jep.2013070103).

²¹¹ Rahm and Reddick, “Information and Communication Technology,” 37.

²¹² Ibid.

²¹³ Jeremy Crump, “What Are the Police Doing on Twitter? Social Media, the Police and the Public,” *Policy & Internet* 3 (2011): 3, 23, doi: [10.2202/1944-2866.1130](https://doi.org/10.2202/1944-2866.1130).

²¹⁴ Crump, “What Are the Police Doing,” 11.

²¹⁵ Ibid., 17.

concludes that police Twitter use in the United Kingdom, at least as of 2011, has been “largely non-transformational,” and that agencies have primarily used the platform as just another medium to deliver messages.²¹⁶

A study by Lieberman, Koetzle, and Sakiyama in 2013 examined a content analysis of Facebook posts from the 23 largest American police agencies over a three-month period. They observed that, since social media technology is relatively new, “there is not a clear blueprint for how to use it most effectively,” so departments have instead “relied on the instincts of public information officers” to strive for success.²¹⁷ In examining the data, they found no correlation between the number of Facebook followers and the rate at which departments posted information.²¹⁸ They did find that followers were more likely to “like” or comment on posts that were longer, and that included URLs to additional content.²¹⁹ Followers were less likely to engage with posts about crime-related topics.²²⁰ Only one percent of the agencies’ posts were responses to user-posted content (that is, questions or comments left by the public).²²¹ The study did not examine how much user-posted content went unanswered.

Research by Lovejoy and Saxton in 2012 examined the Twitter habits of the 100 largest non-profit organizations in the United States. They coded all tweets for a two-week period, and found that only 8 percent were “public reply messages,” which they determined to be the “clearest expression of ‘dialogue.’”²²² They also performed an organizational-level analysis, and determined that most of the non-profits could be classified as “information sources,” those that were distributing information with their

²¹⁶ Ibid., 24.

²¹⁷ Ibid., 458.

²¹⁸ Lieberman, Koetzle, and Sakiyama, “Police Departments’ Use,” 447.

²¹⁹ Ibid., 454.

²²⁰ Ibid., 456.

²²¹ Ibid., 451.

²²² Kristen Lovejoy and Gregory D. Saxton, “Information, Community, and Action: How Nonprofit Organizations Use Social Media,” *Journal of Computer-Mediated Communication* 17 (2012): 344, doi: [10.1111/j.1083-6101.2012.01576.x](https://doi.org/10.1111/j.1083-6101.2012.01576.x).

tweets.²²³ They surmised that, while Twitter seemed to be a more effective “dialogic communication tool” than an organization’s website, information dissemination may always be the foundational or “‘base’ form of communication,” and that “dialogue is simply one essential piece.”²²⁴ If that were the case, they write, they would always expect organizations to have a greater number of information-based tweets than public reply messages.²²⁵ Indeed, the mere fact that an organization has a Twitter account to begin with may indicate that the organization is willing to interact with their stakeholders online in two-way communication.²²⁶ In conclusion, Lovejoy and Saxton find that non-profit organizations could be doing a better job of using social media to engage with their stakeholders.²²⁷

Another study of a non-profit organizations examined the value of monitoring comments left by the public on social media sites. Using the Lance Armstrong doping scandal, which soon turned into a public relations crisis for his non-profit agency Livestrong, Coombs and Holladay noted that people who post comments on social media sites essentially “become ‘involved’ in the crisis as crisis communicators,” and they have the potential to “shape post-crisis organizational reputations” as others read their comments.²²⁸ While Coombs and Holladay did not specifically address it, an agency that chooses to respond to such comments may very well be able to shape people’s interpretation of “negative” comments, and in so doing influence their organization’s reputation.

²²³ Lovejoy, “Information, Community, and Action,” 348.

²²⁴ *Ibid.*, 345, 349.

²²⁵ *Ibid.*

²²⁶ *Ibid.*, 350.

²²⁷ *Ibid.*, 351.

²²⁸ W. Timothy Coombs and Sherry Jean Holladay, “How Publics React to Crisis Communication Efforts: Comparing Crisis Response Reactions Across Sub-Arenas,” *Journal of Communication Management* 18, no. 1 (2014): 44, 45, doi: [10.1108/JCOM-03-2013-0015](https://doi.org/10.1108/JCOM-03-2013-0015).

D. CONCLUSION

This literature review has explored much of the existing research on the social media social media, especially as it pertains to police departments and government agencies, and two-way engagement and followership. Prior research has shown that social media can be a valuable tool for law enforcement, especially during times of crisis. It has also shown that two-way communication is almost universally described as an advanced use of social media and a recommended practice, and it has also shown that having a large base of followers is important to assist with message amplification. What the past research has *not* shown is how all of these components fit together. This thesis explores that gap, attempting to determine if there is a relationship between police agencies' relative amount of two-way engagement on Twitter and their number of followers, and exploring what factors may mediate or moderate that relationship.

This thesis continues with Chapters III, IV, and V, which detail the case studies of the Santa Clara Police Department, the Mountain View Police Department, and the Palo Alto Police Department, respectively. These case studies present various sets of data on each department's Twitter account, with a focus on their rates of two-way engagement and their number of followers. Following these case studies, Chapter VI contains a more detailed analysis, comparing and contrasting results, discerning patterns, and providing the foundation for recommendations.

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III. CASE STUDY #1: SANTA CLARA POLICE DEPARTMENT

The Santa Clara Police Department (SCPD) is the primary law enforcement agency for the city of Santa Clara, California. Located within Santa Clara County and just north of San Jose, Santa Clara had a 2014 estimated population of 122,192.²²⁹ The SCPD has 149 sworn officers and an operating budget of nearly \$63 million.²³⁰

The SCPD Twitter account is @SantaClaraPD (see Figure 1). At the time the data for this study was collected—on October 21, 2015—the SCPD account had sent 800 tweets since their first tweet on April 23, 2014.²³¹ In that time, they had amassed a total of 4,738 followers.²³² Of the three agencies examined in this thesis, the SCPD is the newest to Twitter, has sent the fewest tweets, has the fewest number of followers, and is the largest police department as measured by the number of sworn officers.

For this chapter, as well as the two that follow, the researcher used a descriptive coding method to sort the tweets into categories. Refer to Appendix B for details about the coding structure used.

²²⁹ “QuickFacts: Santa Clara (city), California,” United States Census Bureau, last modified December 2, 2015, <http://quickfacts.census.gov/qfd/states/06/0669084.html>.

²³⁰ “Santa Clara Police Department: About Us,” accessed December 27, 2015, <http://santaclaraca.gov/government/departments/police-department/about-us>.

²³¹ “Santa Clara Police Department on Twitter,” Twitter.com archive, downloaded by author on October 21, 2015, <https://twitter.com/SantaClaraPD>.

²³² Ibid.

Figure 1. Santa Clara Police Department (SCPD) Twitter Homepage



Source: "Santa Clara Police Twitter," accessed January 6, 2016, <https://twitter.com/SantaClaraPD>.

A. DATA FOR THE SANTA CLARA POLICE DEPARTMENT

During the six-month study period (April 21, 2015 to October 21, 2015), the SCPD Twitter account sent a total of 207 tweets. Of these, 49 (24 percent) were retweets of other users' content. Of the remaining 158 agency tweets, 152 were original tweets and six were reply tweets sent in response to another user. Excluding retweets, this means that 3.8 percent of the 158 agency tweets sent by SCPD were two-way communicative tweets.

1. Monthly Engagement and Followership

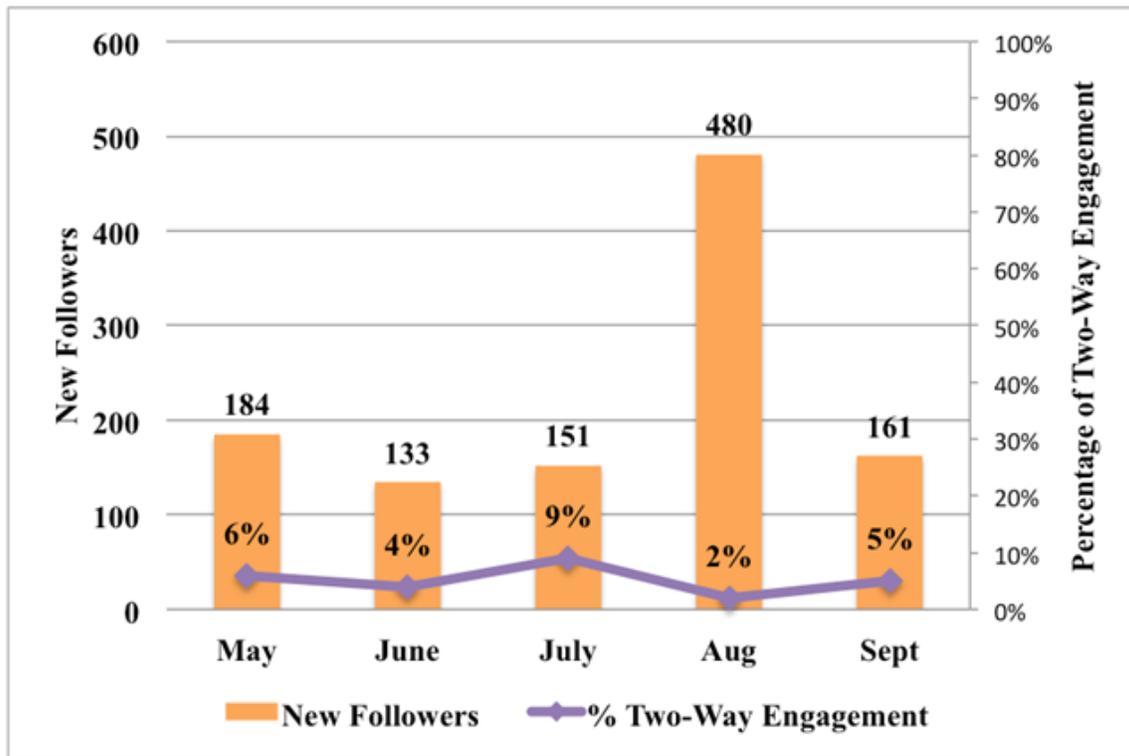
Examining the five full months of data within the survey window (May, June, July, August, and September 2015) results in the data contained in Table 1 and Figures 2 and 3.

Table 1. SCPD Monthly Rate of Two-Way Engagement and Followership

Month	New Followers	% Follower Growth	Agency Tweets	Reply Tweets	% Two-Way
May	184	5.3%	16	1	6%
June	133	3.6%	25	1	4%
July	151	4.0%	23	0	0%
August	480	12.1%	49	1	2%
September	161	3.6%	20	1	5%

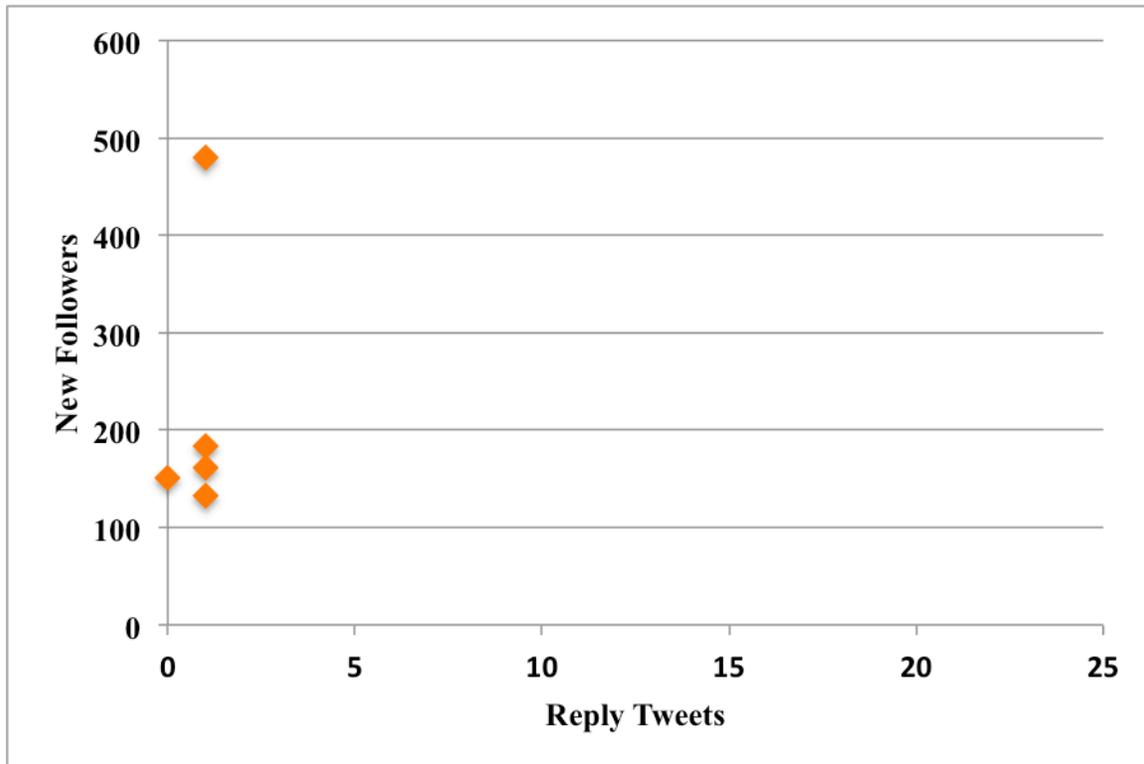
SCPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>.

Figure 2. SCPD Monthly Rate of Two-Way Engagement and New Followers



SCPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>.

Figure 3. SCPD Monthly Rate of Two-Way Engagement and New Followers—Scatter



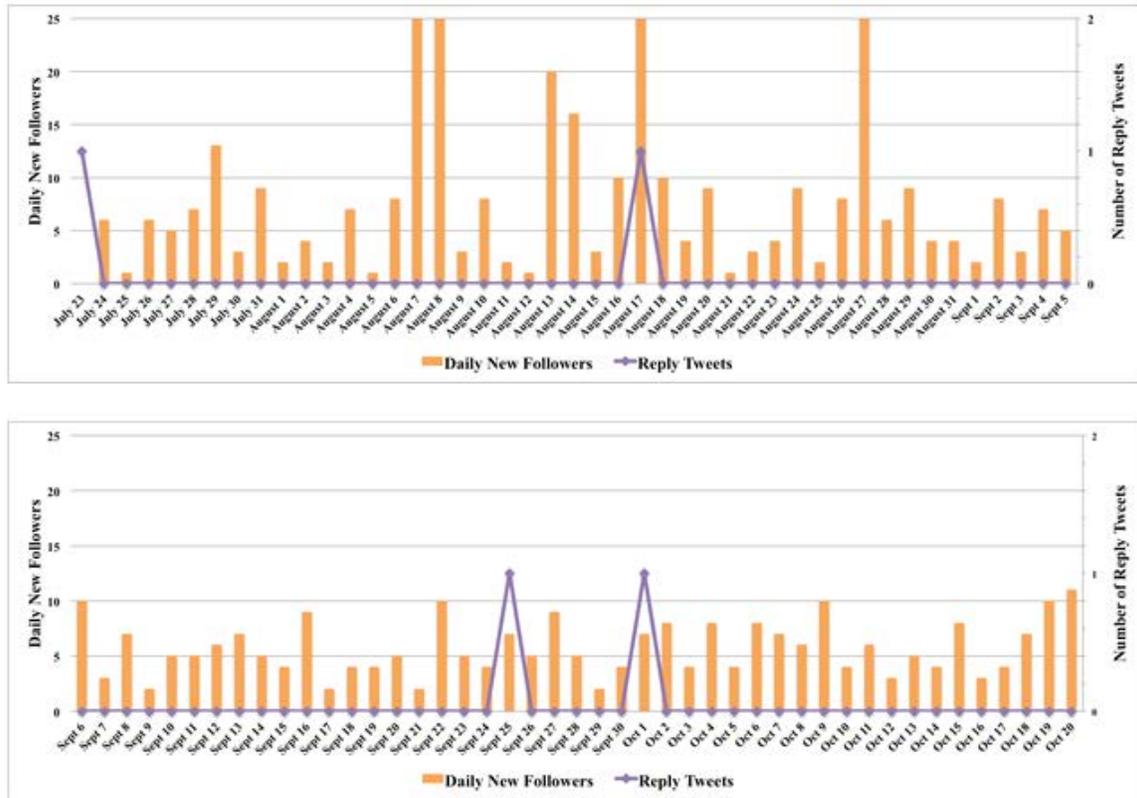
The correlation coefficient of the relationship between the monthly number of reply tweets and new followers for the SCPD was 0.27, indicating, at best, a weak positive linear relationship.²³³ SCPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>.

2. Daily Engagement and Followership

Next, two-way communication was examined on a daily basis between July 23 and October 20 (the only date range available on Twitter at the time the data was collected) and compared to the daily change in followers. Over that 90-day time period, excluding the two days of “exceptional follower growth” (August 7 and August 27; details are provided in Section J of Chapter VI), the SCPD Twitter account grew by an average of 6.32 followers per day. There were four days during that 90-day period on which SCPD sent a single reply tweet each day. This results in the information contained in Figures 4 and 5.

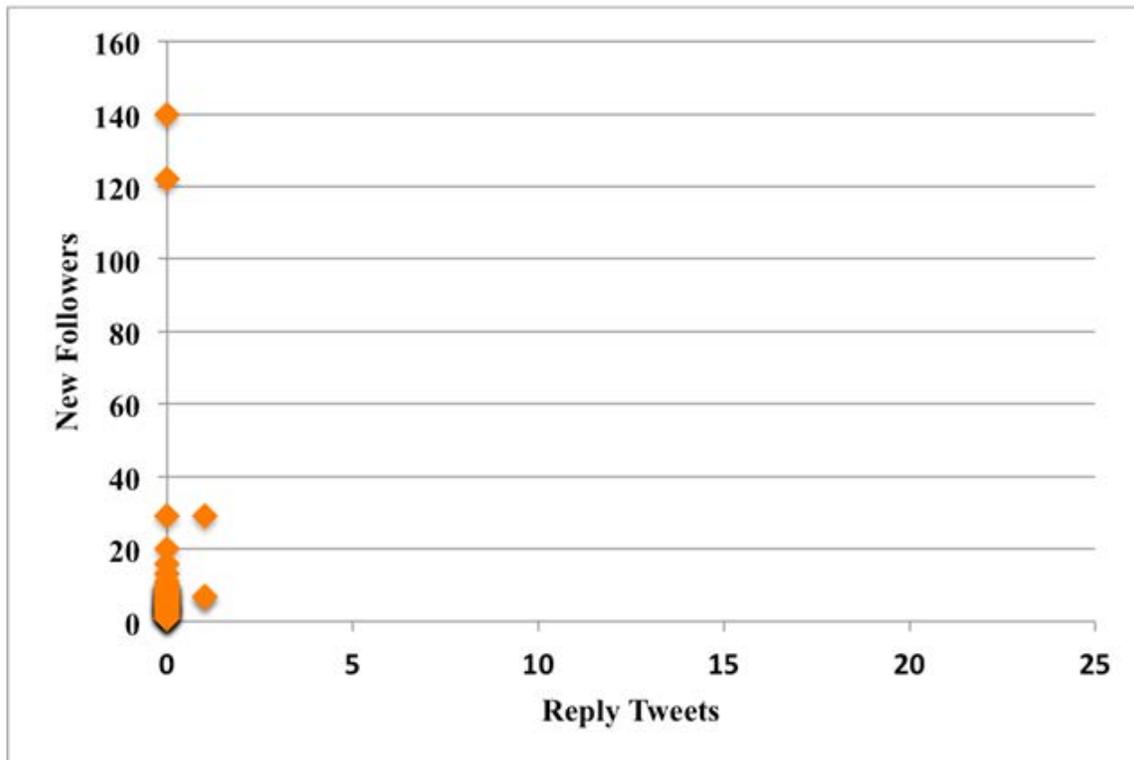
²³³ The Pearson product-moment correlation coefficient was calculated using the Microsoft Excel function “Correlation” within the “Data Analysis” ToolPak add-in.

Figure 4. SCPD Daily Rate of Two-Way Engagement and Followership



SCPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>.

Figure 5. SCPD Daily Two-Way Engagement and New Followers—Scatter



The correlation coefficient of the relationship between the daily number of reply tweets and new followers for the SCPD was 0.05, indicating no linear relationship exists.²³⁴ SCPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>.

²³⁴ The Pearson product-moment correlation coefficient was calculated using the Microsoft Excel function “Correlation” within the “Data Analysis” ToolPak add-in.

3. Categories and Elements of Tweets

All tweets sent by the SCPD over the six-month study period were examined. Again excluding retweets, 158 agency tweets remained, with 152 of those being original tweets and 6 being reply tweets. The categorical breakdown of the 152 original tweets is contained in Table 2.

Table 2. SCPD Categories of Original Tweets

Category	<i>n</i>	% of Agency Tweets
Static news	77	50.7%
Community policing	38	25%
Real-time news	16	10.5%
Other	10	6.6%
Crime prevention / safety message	7	4.6%
Solicitation for community assistance	3	2.0%
Self-promotion of agency communications channel	1	<1%
Humor	0	0%

SCPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>.

The 152 original tweets were also examined to see if they contained any of the following elements: a photo, a video (in either native Twitter format, or with a link to an external video source like YouTube or Vimeo), a hashtag, and/or a URL. The results appear in Table 3.

Table 3. SCPD Elements of Original Tweets

Tweet Element	<i>n</i>	% of Agency Tweets
URL only	65*	42.8%
Words only	23*	15.1%
Picture only	20	13.2%
Picture <i>and</i> hashtag	19	12.5%
Picture <i>and</i> URL	9	5.9%
Hashtag only	8*	5.3%
URL <i>and</i> hashtag	4*	2.6%
Video (external) only	2	1.3%
Video (ext) <i>and</i> hashtag	2	1.3%
Video (native Twitter) only	0	0%
Picture, hashtag, <i>and</i> URL	0	0%
Video (native) <i>and</i> hashtag	0	0%

Note that of the 100 tweets that contained words only, 10 of them were quote tweets, which do not allow the insertion of pictures or video. SCPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>.

Another way to organize the data in Table 3 is to separate the 152 original tweets into those that contain a visual element (a picture or a video), and those that contain text only (including words, hashtags, and URLs). The results appear in Table 4.

Table 4. SCPD Breakdown of Original Tweets—Visual versus Text-Only Elements

Category	<i>n</i>	% of Agency Tweets
Text only	100*	65.8%
Visual element	52	34.2%

Note that of the 100 tweets that contained text only, 10 of them were quote tweets, which do not allow the insertion of pictures or video. SCPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>.

4. Details on Two-Way Engagement

Of the six reply tweets that the SCPD sent during the study period, each was in response to another Twitter user first mentioning the SCPD account. Notably, all of these tweets from other Twitter users were self-initiated; that is to say, they were not sent in response to an underlying SCPD tweet also, the SCPD did not self-initiate any reply tweets to another Twitter user on their own. Table 5 shows the categories of user self-initiated tweets sent to SCPD to which the agency responded.

Table 5. SCPD Categories of User Self-initiated Tweets

Category	<i>n</i>	%
Crime / traffic complaint	3	50%
Inquiry	2	33.3%
Thanking the police	1	16.7%
Community policing	0	0%
Media inquiry	0	0%
Personnel complaint	0	0%
Untrue allegation	0	0%
Condolences	0	0%
Unknown	0	0%

See <https://twitter.com/SantaClaraPD>.

How the agency chose to respond to these tweets self-initiated by users was also studied. The SCPD's reply tweets can be classified into the following categories, as shown in Tables 6, 7, and 8.

Table 6. SCPD Agency Response to User Self-Initiated Tweets—Crime/Traffic Complaint

Category of the SCPD reply tweet	<i>n</i>	%
General acknowledgement / thank-you	1	33.3%
Direction to call/email	1	33.3%
Ask question	1	33.3%

SCPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>.

Table 7. SCPD Agency Response to User Self-Initiated Tweets—Inquiry

Category of the SCPD reply tweet	<i>n</i>	%
Provide information	2	100%

SCPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>.

Table 8. SCPD Agency Response to User Self-Initiated Tweets—Thanking the Police

Category of the SCPD reply tweet	<i>n</i>	%
Conversational reply (more than just a general acknowledgement)	1	100%

SCPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>.

Of the 102 tweets sent by users in response to an underlying tweet from the SCPD, the SCPD responded to 0. Of the 152 original tweets sent by the SCPD, the number of tweets that generated at least one reply from another user is shown in Table 9.

Table 9. SCPD Percentage of Original Tweets Receiving at Least One Reply

Original Tweets from the SCPD (n=152)	n	%
Received zero replies	131	86.2%
Received at least one reply from another user	21	13.8%

See <https://twitter.com/SantaClaraPD>.

For the 21 original tweets that generated responses from users, the categories of those tweets that generated responses are shown in Table 10.

Table 10. SCPD Categories of Original Tweets Receiving at Least One Reply

Category	n	% of User Tweets
Static news	9	42.9%
Community policing	7	33.3%
Other	3	14.3%
Real-time news	2	9.5%
Solicitation for community assistance	0	0%
Crime prevention / safety message	0	0%
Self-promotion of agency communications channel	0	0%
Humor	0	0%

See <https://twitter.com/SantaClaraPD>.

For the 21 original tweets that generated responses from users, some received multiple replies from some users. In total, between those 21 tweets, there were 102 replies. The categories of the original tweets from the SCPD that generated responses are shown in Table 11.

Table 11. SCPD Total Replies by Category of Original Tweet

Category	<i>n</i>	%
Static news	86	84.3%
Community policing	9	8.8%
Other	4	3.9%
Real-time news	3	2.9%
Solicitation for community assistance	0	0%
Self-promotion of agency communications channel	0	0%
Crime prevention / safety message	0	0%
Humor	0	0%

See <https://twitter.com/SantaClaraPD>.

Of the 102 unique replies generated by the SCPD original tweets, users responded as shown in Table 12 to tweets with text, pictures, videos, hashtags, and URLs.

Table 12. SCPD Replies to Original Tweets by Various Elements

Elements of Underlying Agency Tweet Generating User Replies	<i>n</i>	% of Tweets
Words only	71*	69.6%
URL only	16*	15.7%
Picture <i>and</i> hashtag	7	6.9%
Hashtag only	5*	4.9%
Picture only	3	2.9%

Note that of the 92 replies to agency tweets that contained words only, only one reply came in response to an underlying agency tweet that was a quote tweet, which does not allow the insertion of pictures or video. See <https://twitter.com/SantaClaraPD>.

Another way to organize Table 12 is to separate the 102 unique replies by whether the underlying SCPD original tweet contained a visual element (a picture or a video) or text only (including words, hashtags, and URLs), as shown in Table 13.

Table 13. SCPD Breakdown of Replies to Original Tweets—Visual versus Text-Only Elements

Category	<i>n</i>	% of Tweets
Text only	92	90.2%
Visual element	10	9.8%

See <https://twitter.com/SantaClaraPD>.

B. ANALYSIS OF USAGE PATTERNS

The SCPD predominantly uses their Twitter account to broadcast static news to their followers (like news releases, police blotter items, and traffic advisories to caution drivers about potential heavy traffic at future events). One quarter of their agency tweets are related to community policing, and often highlight their involvement with the Special Olympics program and civic events going on within Santa Clara. They often retweet content from other Twitter users, with 49 of the 207 total tweets sent from the SCPD account (23.6 percent) being retweets. They used the “quote tweet” feature 12 times over the study period to share content from other users while simultaneously adding their own original commentary.

The SCPD included hyperlinks (URLs) in 57.9 percent of their original agency tweets. Followers who choose to click on the link were redirected to a website with additional information that cannot fit into Twitter’s limit of 140 characters per tweet almost two-thirds of their original agency tweets contained no visual elements such as pictures or video.

The SCPD used their account to provide real-time Twitter updates on six separate occasions during the study period. These tweets provided information about road closures due to downed power lines, an ongoing manhunt, a major fire that destroyed businesses, a community policing event, and an update on a roadway status following a traffic

collision. The SCPD had two days during which their Twitter account experienced exceptional follower growth; the first came on August 7 (as a result of a press release announcing the arrest of a famous professional football player) with 140 new followers gained, and the second came on August 27 (as a result of their tweets about a major fire that destroyed businesses) with 122 new followers gained. These two cases are examined in Section J of Chapter VI.

The 152 original agency tweets sent by the SCPD did not generate any replies from the public to which they responded with a follow-up tweet all six of their reply tweets sent during the study period came in response to self-initiated tweets from users.

C. CONCLUSION

With the limited number of reply tweets sent from the SCPD Twitter account, no relationship can be discerned between the amount of two-way engagement and its impact on followership. The SCPD primarily uses Twitter as a one-way communication tool, often linking out to content on existing websites and occasionally providing live updates to the public about in-progress events. None of their six reply tweets generated an ongoing back-and-forth conversation between their agency and the public. Additional analysis of the SCPD data is found in Chapter VI.

IV. CASE STUDY #2: MOUNTAIN VIEW POLICE DEPARTMENT

The Mountain View Police Department (MVPD) is the primary law enforcement agency for the city of Mountain View, California. Located within Santa Clara County and just south of Palo Alto, Mountain View had a 2014 estimated population of 79,378.²³⁵ The MVPD has 96 sworn officers and an operating budget of over \$32 million.²³⁶

The MVPD Twitter account is @MountainViewPD (see Figure 6). At the time the data for this study was collected—October 21, 2015—the MVPD account had sent 5,433 tweets since their first tweet on October 2, 2008.²³⁷ In that time, they had amassed a total of 14,326 followers.²³⁸ Of the three agencies examined in this thesis, the MVPD has been on Twitter the longest, has sent the most tweets, has the highest number of followers, and is the second largest police department as measured by the number of sworn officers.

²³⁵ “QuickFacts: Mountain View (city), California,” United States Census Bureau, last modified December 2, 2015, <http://quickfacts.census.gov/qfd/states/06/0649670.html>.

²³⁶ “Fiscal Year 2015–16 Adopted Budget,” City of Mountain View, accessed December 31, 2015, 4–180, <http://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=17481>.

²³⁷ “Mountain View Police Department on Twitter,” Twitter.com archive, downloaded by author on October 21, 2015. <https://twitter.com/MountainViewPD>.

²³⁸ Ibid.

Figure 6. Mountain View Police Department (MVPD) Twitter Homepage



Source: “Mountain View Police Twitter,” accessed January 6, 2016, <https://twitter.com/MountainViewPD>.

A. DATA FOR THE MOUNTAIN VIEW POLICE DEPARTMENT

During the six-month time period studied (April 21, 2015 to October 21, 2015), the MVPD Twitter account sent a total of 638 tweets. Of these, 41 (6 percent) were retweets of other users’ content. Of the remaining 597 agency tweets, 259 were original tweets and 338 were reply tweets sent in response to another user. Excluding retweets, this means that 56.6 percent of the 597 agency tweets sent by MVPD were two-way communicative tweets.

1. Monthly Engagement and Followership

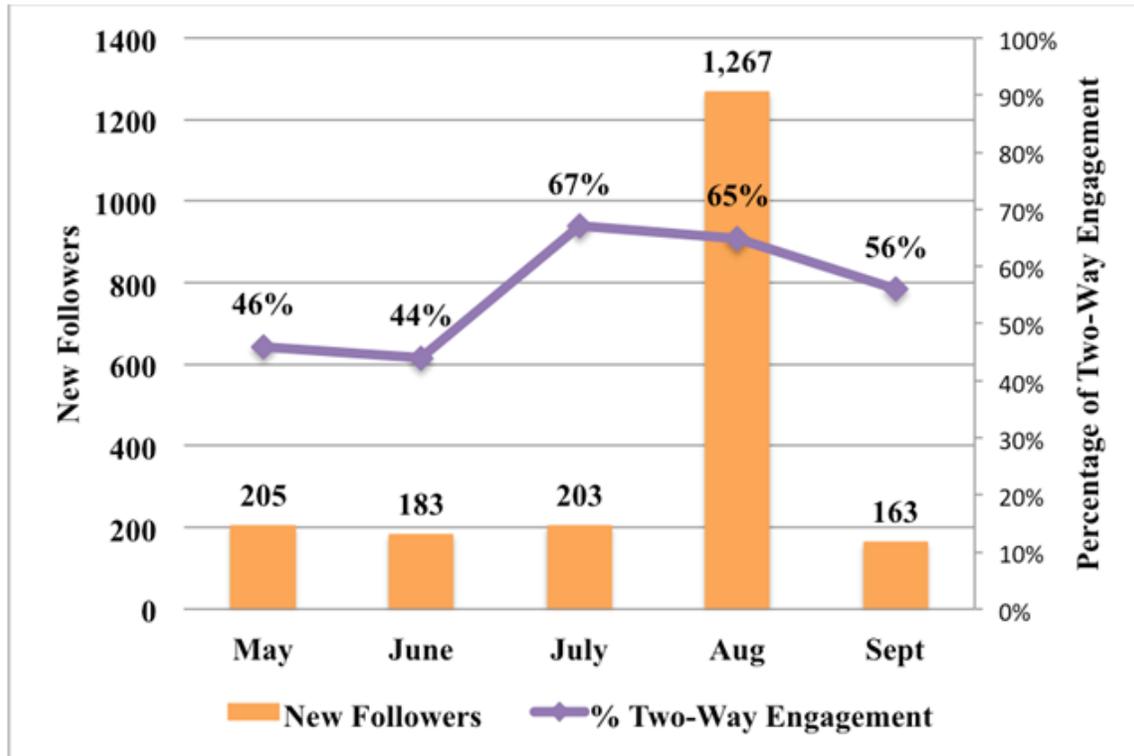
Examining the five full months of data within the survey window (May, June, July, August, and September 2015) results in data contained in Table 14 and Figures 7 and 8.

Table 14. MVPD Monthly Rate of Two-Way Engagement and New Followers

Month	New Followers	% Follower Growth	Agency Tweets	Reply Tweets	% Two-Way
May	205	1.7%	69	32	46%
June	183	1.5%	122	54	44%
July	203	1.6%	128	86	67%
August	1,267	9.9%	161	105	65%
September	163	1.2%	75	42	56%

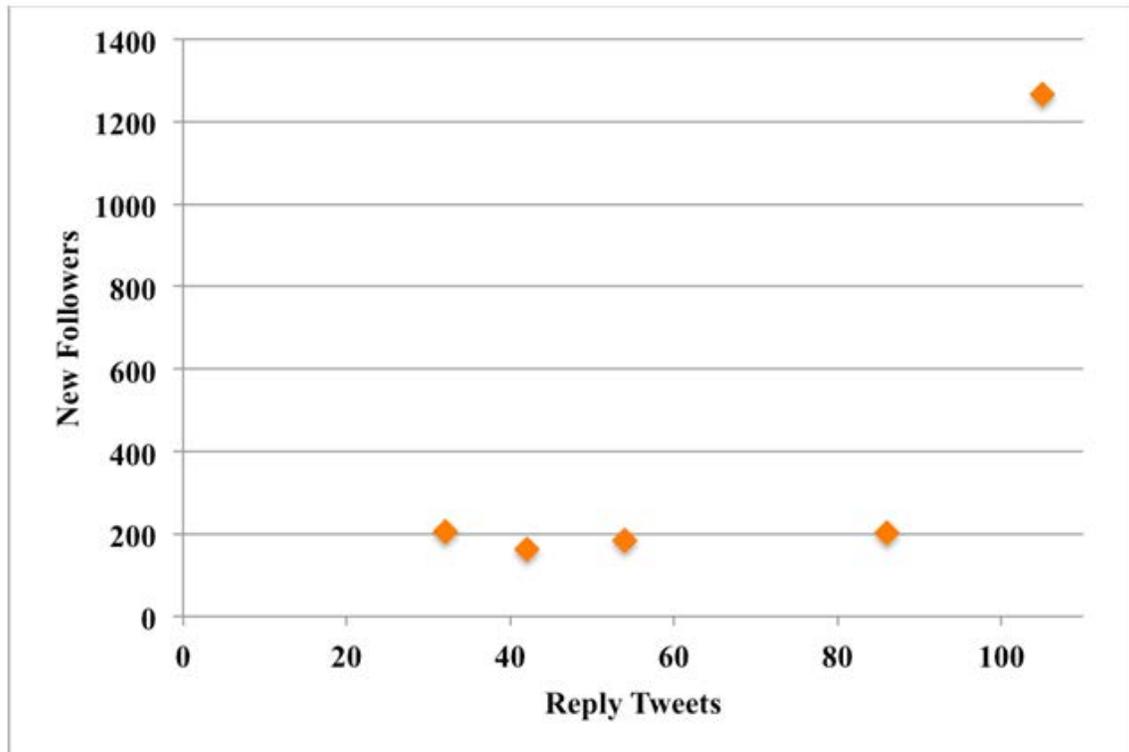
MVPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/MountainViewPD>.

Figure 7. MVPD Monthly Rate of Two-Way Engagement and New Followers



MVPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/MountainViewPD>.

Figure 8. MVPD Monthly Rate of Two-Way Engagement and New Followers—Scatter



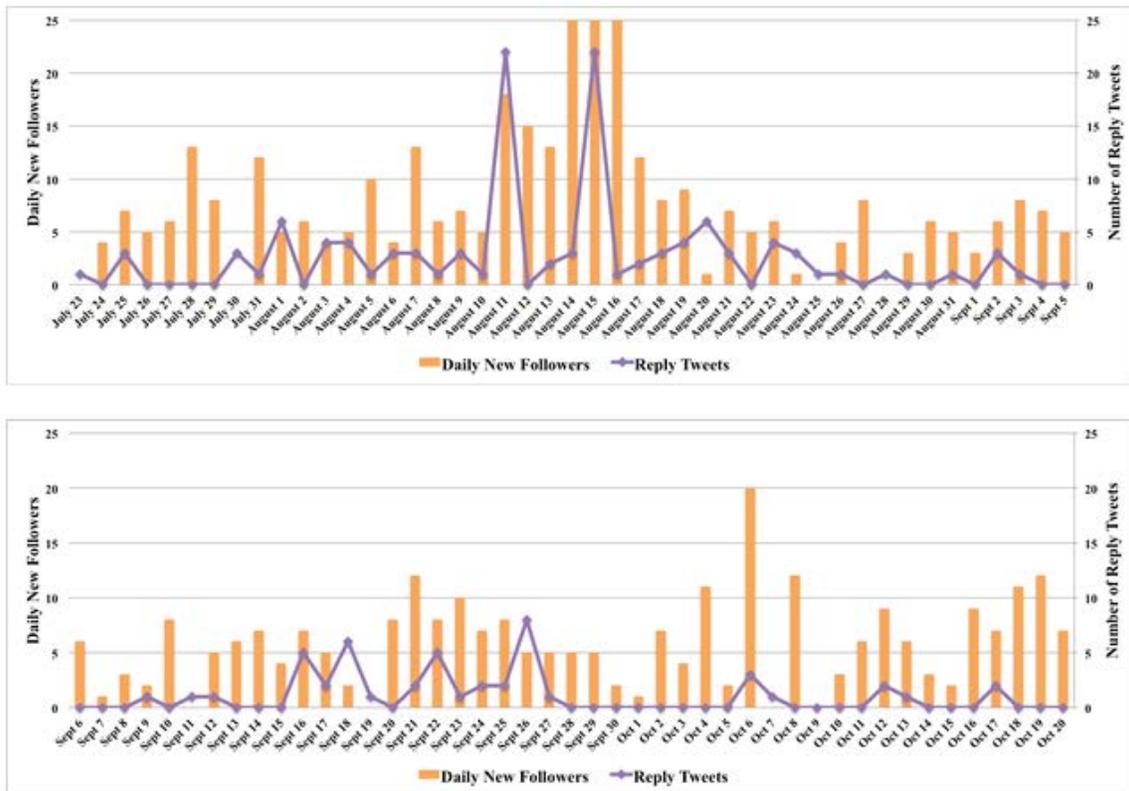
The correlation coefficient of the relationship between the monthly number of reply tweets and new followers for the MVPD was 0.76, indicating a strong positive linear relationship.²³⁹ MVPD Twitter account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/MountainViewPD>.

²³⁹ The Pearson product-moment correlation coefficient was calculated using the Microsoft Excel function “Correlation” within the “Data Analysis” ToolPak add-in.

2. Daily Engagement and Followership

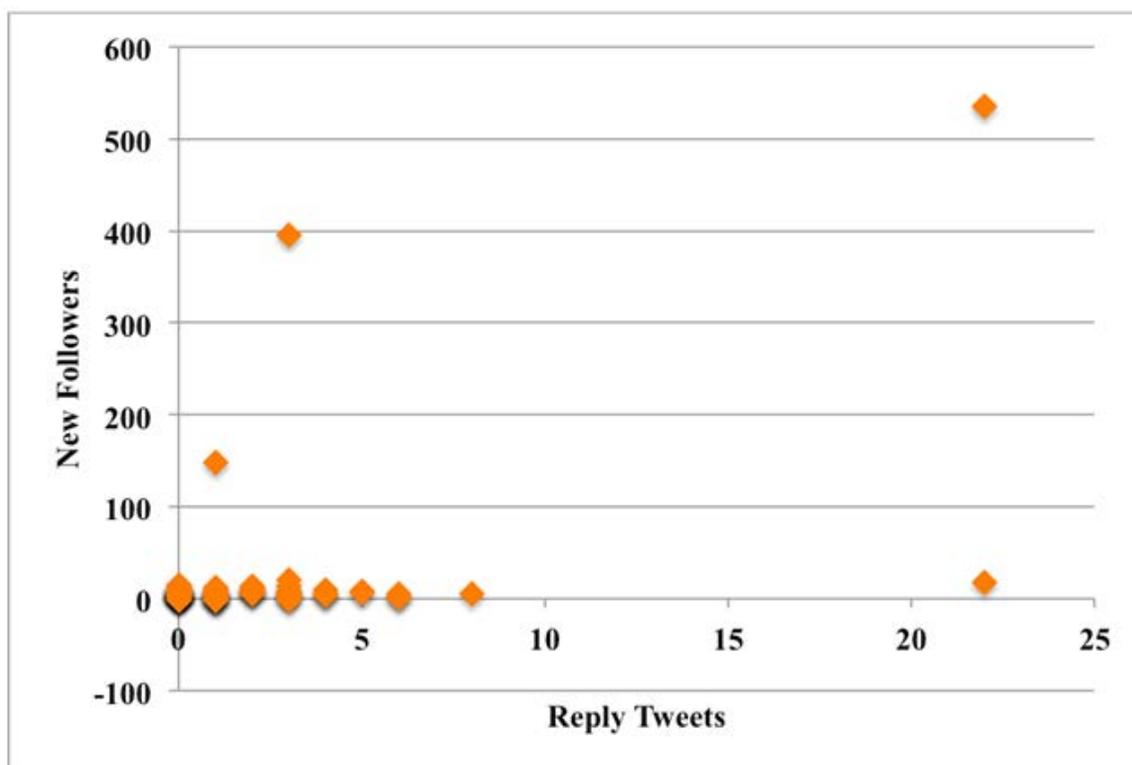
Next, two-way communication was examined on a daily basis between July 23 and October 20 (the only date range available on Twitter at the time the data was collected) and compared to the daily change in followers. Over that 90-day period, excluding the three days of “exceptional follower growth” (August 14, 15, and 16; details are provided in Section J of Chapter VI), the MVPD Twitter account grew by an average of 6.13 followers per day. There were 50 days during that period on which MVPD sent at least one reply tweet. This results in the information contained in Figures 9 and 10.

Figure 9. MVPD Daily Rate of Two-Way Engagement and New Followers



MVPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/MountainViewPD>.

Figure 10. MVPD Daily Two-Way Engagement and New Followers



The correlation coefficient of the relationship between the daily number of reply tweets and new followers for the MVPD was 0.51, indicating a moderate positive linear relationship.²⁴⁰ It should be noted that the outlier data might be causing the correlation coefficient to be artificially high. MVPD Twitter archive and account analytics downloaded and accessed October 21, 2015. See <https://twitter.com/MountainViewPD>.

²⁴⁰ The Pearson product-moment correlation coefficient was calculated using the Microsoft Excel function "Correlation" within the "Data Analysis" ToolPak add-in.

3. Categories and Elements of Tweets

All tweets sent by the MVPD over the six-month study period were examined. Again excluding retweets, 597 agency tweets remained, with 259 of those being original tweets and 338 being reply tweets.

The categorical breakdown of the 259 original tweets is contained in Table 15. Refer to Appendix B for details about the coding structure used.

Table 15. MVPD Categories of Original Tweets

Category	<i>n</i>	% of Agency Tweets
Community policing	69	26.6%
Static news	51	19.7%
Solicitation for community assistance	44	17.0%
Crime prevention / safety message	39	15.1%
Real-time news	33	12.7%
Other	15	5.8%
Self-promotion of agency communications channel	5	1.9%
Humor	3	1.2%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

The 259 original tweets were also examined to see if they contained any of the following elements: a photo, a video (in either native Twitter format, or with a link to an external video source like YouTube or Vimeo), a hashtag, and/or a URL. The results appear in Table 16.

Table 16. MVPD Elements of Original Tweets

Tweet Element	<i>n</i>	% of Agency Tweets
Words only	70*	27.0%
Picture only	58	22.4%
Picture <i>and</i> hashtag	41	15.8%
Picture <i>and</i> URL	31	12.0%
Hashtag only	23*	8.9%
Picture, hashtag, <i>and</i> URL	12	4.6%
URL only	8*	3.1%
Video (external) only	5	1.9%
Video (native) only	4	1.5%
Video (native) <i>and</i> hashtag	3	1.2%
Video (external) <i>and</i> hashtag	2	<1%
Video (external) <i>and</i> hashtag <i>and</i> URL	1	<1%
URL <i>and</i> hashtag	0	0%

Note that of the 101 tweets that contained text only, 72 of them were quote tweets, which do not allow the insertion of pictures or video. MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Another way to organize Table 16 is to separate the 259 original tweets into those that contain a visual element (a picture or a video), and those that contain text only (including words, hashtags, and URLs). The results appear in Table 17.

Table 17. MVPD Breakdown of Original Tweets—Visual versus Text-Only Elements

Category	<i>n</i>	% of Agency Tweets
Visual element	158	61.0%
Text only	101*	39.0%

Note that of the 101 tweets that contained words only, 72 of them were quote tweets, which do not allow the insertion of pictures or video. MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

4. Details on MVPD Two-Way Engagement

Of the 338 reply tweets that the MVPD sent during the study period, 316 were in response to another Twitter user first mentioning the MVPD account. Of these, 216 were other Twitter users who had first mentioned the MVPD account, with 122 of those being self-initiated inquiries and 94 being sent in response to an underlying MVPD tweet. The remaining 100 reply tweets sent by the MVPD were additional tweets following up on the same conversation (for example, if user @joesmith sent a reply to an underlying MVPD tweet, MVPD may have sent an initial tweet in response, and then two additional tweets to provide more information). Also, the MVPD self-initiated 22 reply tweets to other Twitter users, which is the functional equivalent of initiating a conversation or interjecting oneself into an existing conversation. Table 18 shows the categories of user self-initiated tweets sent to MVPD to which the agency responded.

Table 18. MVPD Categories of User Self-Initiated Tweets

Category	<i>n</i>	%
Crime / traffic complaint	45	36.9%
Inquiry	29	23.8%
Thanking the police	16	13.1%
Unknown	16	13.1%
Personnel complaint	7	5.7%
Community policing	6	4.9%
Media inquiry	1	<1%
Condolences	1	<1%
Untrue allegation	1	<1%

See <https://twitter.com/MountainViewPD>.

How the agency chose to respond to these tweets self-initiated by users was also studied. The MVPD’s initial reply tweet to each inquiry can be classified into the categories shown in Tables 19–27.

Table 19. MVPD Agency Response to User Self-Initiated Tweets—Crime/
Traffic Complaint

Category of the MVPD reply tweet	<i>n</i>	%
Direction to call / email	17	37.8%
Conversational	9	20.0%
General acknowledgement / thank-you	8	17.8%
Provide information	6	13.3%
Ask question	3	6.7%
Humor	2	4.4%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 20. MVPD Agency Response to User Self-Initiated Tweets—Inquiry

Category of the MVPD reply tweet	<i>n</i>	%
Provide information	18	62.1%
Direction to call/email	5	17.2%
Conversational	5	17.2%
Ask question	1	3.4%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 21. MVPD Agency Response to User Self-Initiated Tweets—Thanking
the Police

Category of the MVPD reply tweet	<i>n</i>	%
Conversational	12	75.0%
General acknowledgement / thank-you	4	25.0%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 22. MVPD Agency Response to User Self-Initiated Tweets—
Unknown

Category of the MVPD reply tweet	<i>n</i>	%
Direction to call/email	6	37.5%
Provide information	3	18.8%
Conversational	3	18.8%
Ask question	2	12.5%
General acknowledgement / thank-you	2	12.5%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 23. MVPD Agency Response to User Self-Initiated Tweets—
Personnel Complaint

Category of the MVPD reply tweet	<i>n</i>	%
Direction to call/email	6	85.7%
Provide information	1	14.3%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 24. MVPD Agency Response to User Self-Initiated Tweets—
Community Policing

Category of the MVPD reply tweet	<i>n</i>	%
Humor	2	33.3%
General acknowledgement / thank-you	1	16.7%
Direction to call/email	1	16.7%
Ask question	1	16.7%
Conversational	1	16.7%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 25. MVPD Agency Response to User Self-Initiated Tweets—Media Inquiry

Category of the MVPD reply tweet	<i>n</i>	%
Conversational	1	100%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 26. MVPD Agency Response to User Self-Initiated Tweets—Condolences

Category of the MVPD reply tweet	<i>n</i>	%
Conversational	1	100%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Table 27. MVPD Agency Response to User Self-Initiated Tweets—Untrue Allegation

Category of the MVPD reply tweet	<i>n</i>	%
Provide information	1	100%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

Of the 94 tweets sent by users in response to an underlying tweet from the MVPD, and to which the MVPD responded in two-way conversation, the categories of original tweets from the agency that generated the responses are contained in Table 28.

Table 28. MVPD Categories of Original Tweets Generating a Two-Way Conversation

Category	<i>n</i>	% of User Tweets
Real-time news	27	28.7%
Community policing	22	23.4%
Static news	21	22.3%
Solicitation for community assistance	11	11.7%
Crime prevention / safety message	9	9.6%
Other	3	3.2%
Self-promotion of agency communications channel	1	1.1%
Humor	0	0%

See <https://twitter.com/MountainViewPD>.

Of the 259 original tweets sent by the MVPD, the number of tweets that generated at least one reply from another user is shown in Table 29.

Table 29. MVPD Percentage of Original Tweets Receiving at Least One Reply

Original Tweets from the MVPD (<i>n</i> =259)	<i>n</i>	%
Received at least one reply from another user	75	29.0%
Received zero replies	184	71.0%

See <https://twitter.com/MountainViewPD>.

For the 75 original tweets that generated responses from users, the categories of those tweets that generated responses are shown in Table 30.

Table 30. MVPD Categories of Original Tweets Generating at Least One Reply

Category	<i>n</i>	%
Community policing	17	22.7%
Real-time news	15	20.0%
Static news	14	18.7%
Solicitation for community assistance	11	14.7%
Crime prevention / safety message	11	14.7%
Other	5	6.7%
Self-promotion of agency communications channel	1	1.3%
Humor	1	1.3%

See <https://twitter.com/MountainViewPD>.

For the 75 original tweets that generated responses from users, some received multiple replies from some users. In total, between those 75 tweets, there were 148 replies. The categories of the original tweets from the MVPD that generated replies are shown in Table 31.

Table 31. MVPD Total Replies by Category of Original Tweet

Category	<i>n</i>	%
Community policing	33	22.3%
Real-time news	31	20.9%
Static news	23	15.5%
Solicitation for community assistance	22	14.9%
Crime prevention / safety message	21	14.2%
Other	12	8.1%
Humor	5	3.4%
Self-promotion of agency communications channel	1	<1%

See <https://twitter.com/MountainViewPD>.

Of the 148 unique replies generated by the MVPD original tweets, users responded as shown in Table 32 to tweets with the text, pictures, videos, hashtags, and URLs.

Table 32. MVPD Replies to Original Tweets by Various Elements

Elements of Underlying Agency Tweet Generating User Replies	<i>n</i>	% of Tweets
Picture only	42	28.4%
Words only	39*	26.4%
Picture <i>and</i> hashtag	37	25.0%
Picture <i>and</i> URL	11	7.4%
Picture, hashtag, <i>and</i> URL	7	4.7%
Video (native) only	4	2.7%
Video (external) only	3	2.0%
Hashtag only	3	2.0%
URL only	1	<1%
Video (native) <i>and</i> hashtag	1	<1%
Video (external) <i>and</i> hashtag	0	0%
Video (external) <i>and</i> hashtag <i>and</i> URL	0	0%
URL <i>and</i> hashtag	0	0%

Note that of the 39 replies to agency tweets that contained words only, 19 of them were replies to quote tweets, which do not allow the insertion of pictures or video. See <https://twitter.com/MountainViewPD>.

Another way to organize Table 32 is to separate the 148 unique replies by if the underlying MVPD original tweet contained a visual element (a picture or a video) or text only (including words, hashtags, and URLs), as shown in Table 33.

Table 33. MVPD Breakdown of Replies to Original Tweets—Visual versus Text-Only Elements

Category	<i>n</i>	% of Tweets
Visual element	105	70.9%
Text only	43	29.1%

See <https://twitter.com/MountainViewPD>.

The MVPD also self-initiated 22 reply tweets to other Twitter users, which is the functional equivalent of initiating a conversation or interjecting oneself into an existing conversation. The categories of the initial MVPD reply tweet are shown in Table 34.

Table 34. MVPD Categories of Agency Self-Initiated Reply Tweets to Other Users

Category of the MVPD reply tweet	<i>n</i>	%
Conversational	7	31.8%
Provide information	7	31.8%
Humor	4	18.2%
Direction to call/email	2	9.1%
Ask question	1	4.5%
Support for another agency	1	4.5%
General acknowledgement / thank-you	0	0%

MVPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/MountainViewPD>.

B. ANALYSIS OF USAGE PATTERNS

The MVPD is very active on Twitter, with more than three times the number of tweets sent during the study period than the SCPD. Most of the MVPD original tweets fell into the categories of news (32.4 percent for combined static news and real-time updates), community policing (26.6 percent), solicitations for community assistance (17.0 percent), and crime prevention/safety messages (15.1 percent). The MVPD had a small percentage of retweets during the study period, at only 6 percent. However, they made extensive use of the quote tweet feature, sending 76 such tweets during the study period. This is a different way to share other users' content, and is essentially the equivalent of a retweet but with commentary added from the MVPD. This approach is unique to the MVPD among the three agencies studied, and is studied extensively in Chapter VI.

The MVPD account has a high degree of two-way engagement, with over 56 percent of the agency tweets coming in the form of replies. The MVPD received (and replied at least once to) 122 separate self-initiated tweets sent by users directly to them. Most often, users were complaining about crime or traffic (seven, in fact, were complaining about police personnel), or were making an inquiry of some sort to the department. These 122 tweets were the functional equivalent of a user starting a two-way conversation with the police department. The MVPD replied at least once to each of these 122 tweets, most often by directing the user to make a phone call or send email for follow-up, or providing information to the user.

At least one user reply was generated by 75 of the MVPD's 259 original tweets (29 percent). Tweets about community policing or news (61.4 percent) were most likely to spur these replies. Of the 94 separate tweets sent by users in response to an underlying tweet from the MVPD (and to which the MVPD replied in two-way conversation), 74.4 percent were generated by tweets about news or community policing. Agency tweets about solicitations for community assistance or crime prevention/safety messages got fewer replies from users.

The MVPD sent an additional 100 reply tweets to users as part of ongoing, back-and-forth conversations (i.e., the agency sent multiple replies to the same user). Examples of such conversations follow in Chapter VI.

Another approach to two-way conversation unique to the MVPD among the three agencies studied is *how* they chose to reply to inquiries from the public. Rather than writing a reply tweet that would only be visible to users who follow both the MVPD account and the inquiring user, the MVPD would often structure their reply tweet in a manner that would broadcast their response to all of the MVPD's followers. This practice is examined in detail in Chapter VI.

The MVPD often included a visual element in their agency tweets, with 61.0 percent of their original tweets containing a picture or video. Of the 39.0 percent of their original tweets that contained words only, however, nearly three-quarters were quote tweets, which do not allow the insertion of pictures or video. Users were more likely to reply to tweets that contained visual elements, as 70.9 percent of the 148 user replies to underlying agency tweets were written in response to those agency tweets that contained pictures or video. Additional discussion of visual elements and user responses they generate are included in Section D of Chapter VI (see, specifically, Figure 25).

The MVPD self-initiated 22 reply tweets that were directed to other users; this is the functional equivalent of the agency beginning a two-way conversation or interjecting itself into a pre-existing conversation between other users.

The MVPD provided real-time information on 15 separate occasions during the study period. The topics of these real-time updates ranged from road closure information, to news about a loud "boom" heard in town, to a major injury collision, to a natural gas odor investigation, to a manhunt for a suspect involved in an assault with a weapon. As a result of the last incident, which occurred on August 15, the MVPD's Twitter account experienced one period of exceptional follower growth (with 1,080 new followers gained). This is examined in Section J of Chapter VI.

C. CONCLUSION

The MVPD Twitter account regularly engages users in two-way dialogue, with more than half of their tweets sent in response to other users. It appears as though there is a correlation between their amount of two-way engagement and their number of followers.

The agency routinely has ongoing, multiple-tweet conversations with other users, and often tweets in a conversational style, making robust use of pictures and video. The MVPD does two unique things to highlight their two-way engagement to all of their users: they make extensive use of the quote tweet feature, and they routinely reply to users in a way that is visible to all of their followers. Users regularly self-initiate conversations with the MVPD, and receive informative responses from the agency. The MVPD also self-initiates conversations with users.

V. CASE STUDY #3: PALO ALTO POLICE DEPARTMENT

The Palo Alto Police Department (PAPD) is the primary law enforcement agency for the city of Palo Alto, California. Located within Santa Clara County and just north of Mountain View, Palo Alto had a 2014 estimated population of 66,955.²⁴¹ The PAPD has 92 sworn officers and an operating budget of over \$32.5 million.²⁴²

The PAPD Twitter account is @PaloAltoPolice (see Figure 11). At the time the data for this study was collected—October 21, 2015—the PAPD account had sent 5,357 tweets since their first tweet on May 16, 2010.²⁴³ In that time, they had amassed a total of 12,420 followers.²⁴⁴ Of the three agencies examined in this thesis, the PAPD has been on Twitter the second longest, has sent the second-most tweets, has the second-highest number of followers, and is the smallest police department as measured by the number of sworn officers.²⁴⁵

²⁴¹ “QuickFacts: Palo Alto (city), California,” United States Census Bureau, last modified December 2, 2015, <http://quickfacts.census.gov/qfd/states/06/0655282.html>.

²⁴² “Adopted Operating Budget,” City of Palo Alto, accessed January 1, 2016, 294–295, 293, <http://www.cityofpaloalto.org/civicax/filebank/documents/43341>.

²⁴³ “Palo Alto Police Department on Twitter,” Twitter.com archive, downloaded by author on October 21, 2015, <https://twitter.com/PaloAltoPolice>.

²⁴⁴ Ibid.

²⁴⁵ It should be noted that the author is employed as the public affairs manager for the Palo Alto Police Department, and manages the PAPD Twitter account.

Figure 11. Palo Alto Police Department Twitter Homepage



Source: “Palo Alto Police Twitter,” accessed January 6, 2016, <https://twitter.com/PaloAltoPolice>.

A. DATA FOR THE PALO ALTO POLICE DEPARTMENT

During the six-month time period studied (April 21, 2015 to October 21, 2015), the PAPD Twitter account sent a total of 803 tweets.²⁴⁶ Of these, 32 (4.0 percent) were retweets of other users’ content. Of the remaining 771 agency tweets, 281 were original tweets and 490 were reply tweets sent in response to another user. Excluding retweets, this means that 63.6 percent of the 771 agency tweets sent by PAPD were two-way communicative tweets.

1. Monthly Engagement and Followership

Examining the five full months of data within the survey window (May, June, July, August, and September 2015), results are contained in Table 35 and Figures 12 and 13.

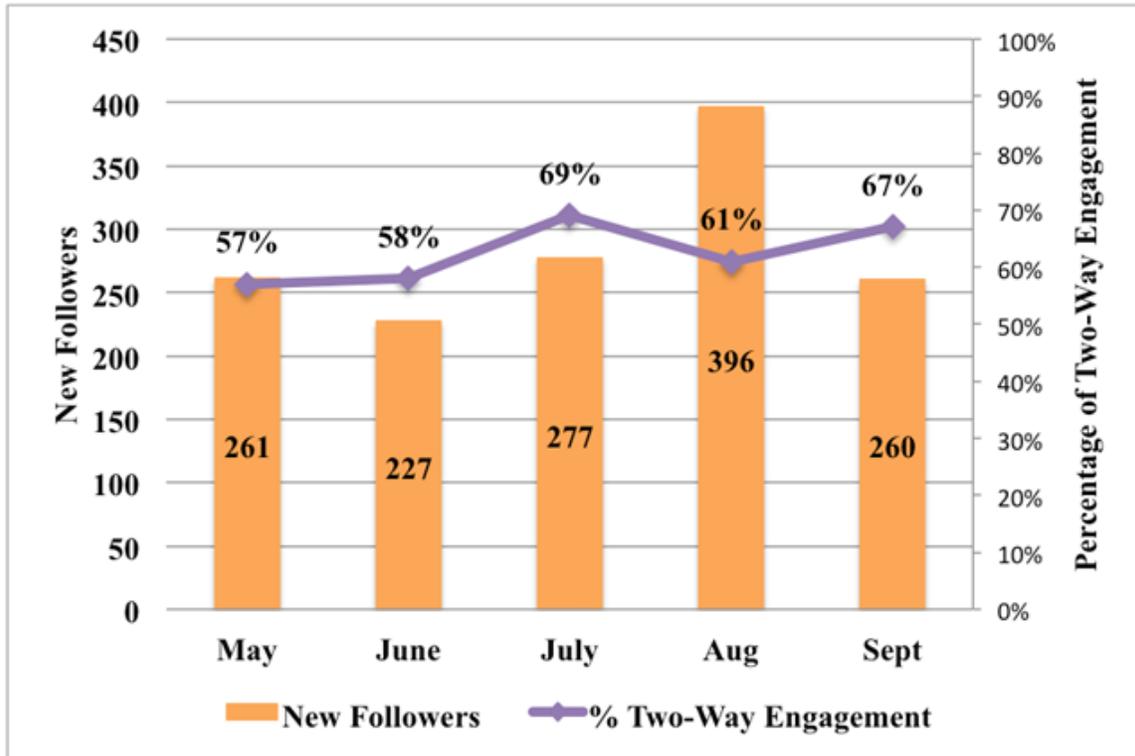
²⁴⁶ Publicly available information accessed via <https://twitter.com/PaloAltoPolice>.

Table 35. PAPD Monthly Rate of Two-Way Engagement and New Followers

Month	New Followers	% Follower Growth	Agency Tweets	Reply Tweets	% Two-Way
May	261	2.4%	115	66	57%
June	227	2.0%	145	84	58%
July	277	2.4%	124	86	69%
August	396	3.4%	147	90	61%
September	260	2.2%	129	87	67%

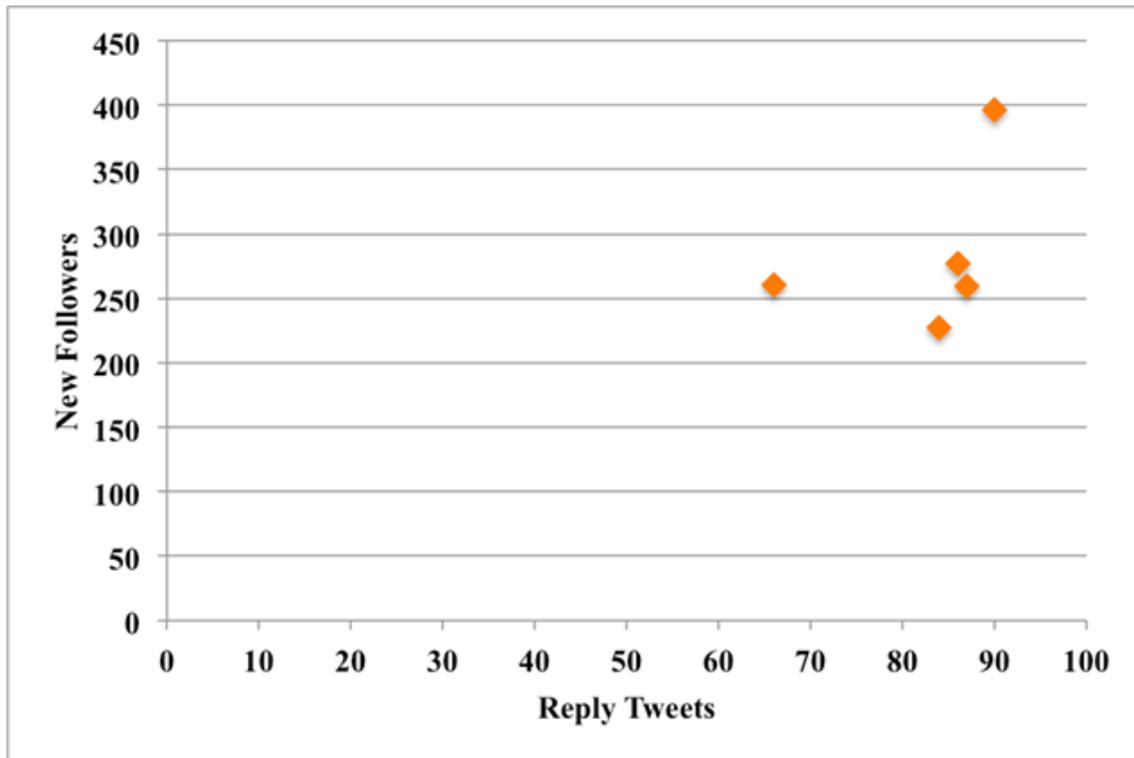
PAPD Twitter archive and account analytics downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Figure 12. PAPD Monthly Rate of Two-Way Engagement and New Followers



PAPD Twitter archive and account analytics downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Figure 13. PAPD Monthly Rate of Two-Way Engagement and New Followers—Scatter



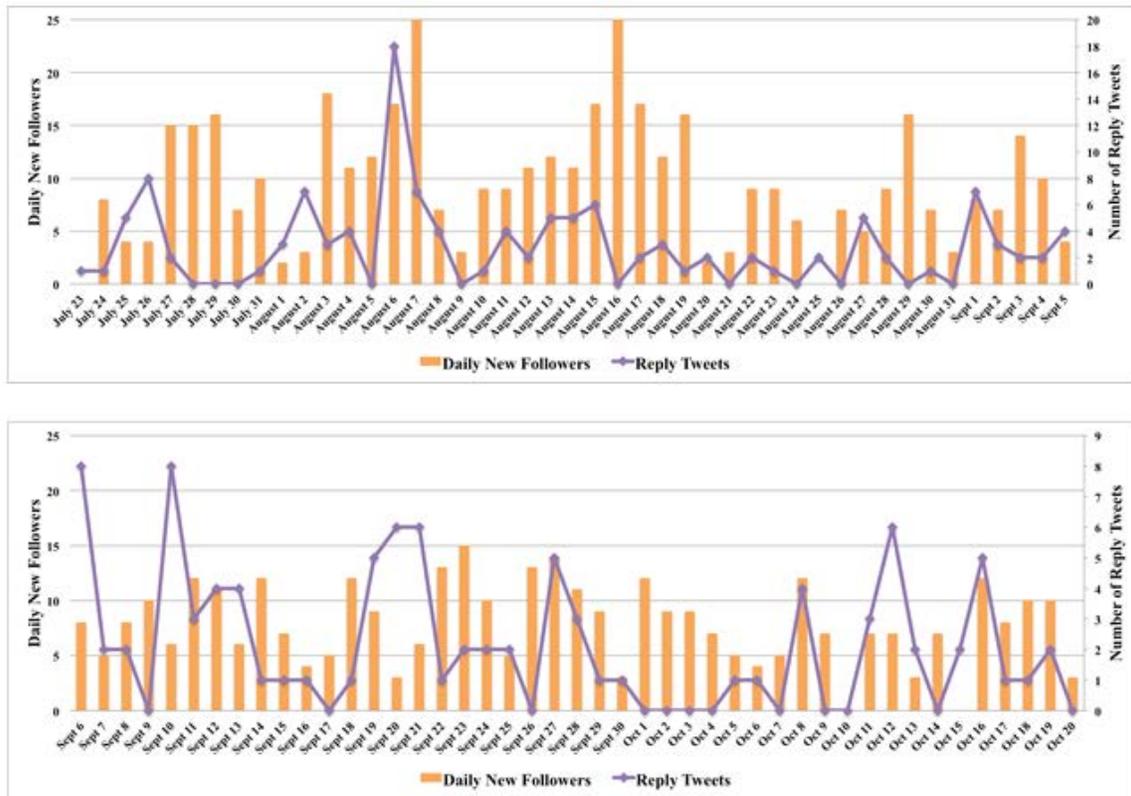
The correlation coefficient of the relationship between the monthly number of reply tweets and new followers for the PAPD was 0.40, indicating a weak to moderate positive linear relationship.²⁴⁷ PAPD Twitter archive and account analytics downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

²⁴⁷ The Pearson product-moment correlation coefficient was calculated using the Microsoft Excel function “Correlation” within the “Data Analysis” ToolPak add-in.

2. Daily Engagement and Followership

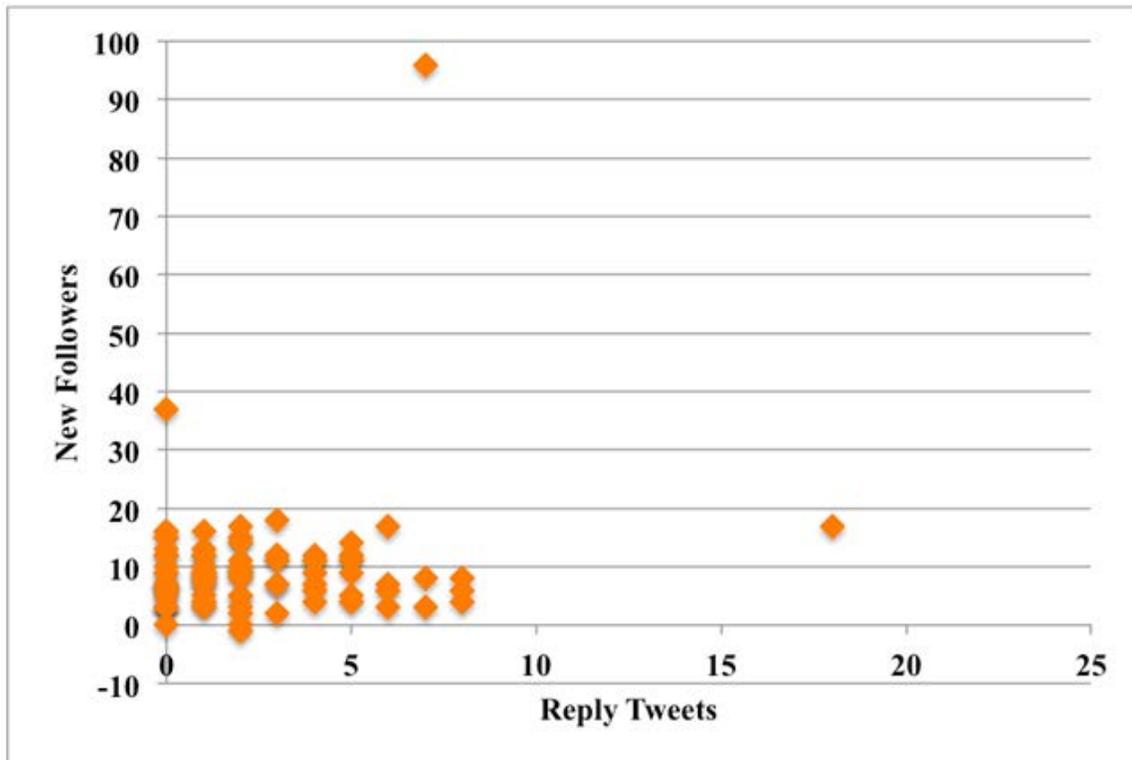
Next, two-way communication was examined on a daily basis between July 23 and October 20 (the only date range available on Twitter at the time the data was collected) and compared to the daily change in followers. Over that 90-day period, excluding the one day of “exceptional follower growth” (August 7; details are provided in Section J of Chapter VI), the PAPD Twitter account grew by an average of 8.70 followers per day. There were 50 days during that 90-day time period on which PAPD sent at least one reply tweet. This results in the information contained in Figures 14 and 15.

Figure 14. PAPD Daily Rate of Two-Way Engagement and New Followers



PAPD Twitter account analytics downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Figure 15. PAPD Daily Two-Way Engagement and New Followers—Scatter



The correlation coefficient of the relationship between the daily number of reply tweets and new followers for the PAPD was 0.17, indicating a very weak positive linear relationship.²⁴⁸ PAPD Twitter account analytics downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

²⁴⁸ The Pearson product-moment correlation coefficient was calculated using the Microsoft Excel function “Correlation” within the “Data Analysis” ToolPak add-in.

3. Categories and Elements of Tweets

All tweets sent by the PAPD over the six-month study period were examined. Again excluding retweets, 771 agency tweets remained, with 281 of those being original tweets and 490 being reply tweets.

The categorical breakdown of the 281 original tweets is contained in Table 36. Refer to Appendix B for details about the coding structure used.

Table 36. PAPD Categories of Original Tweets

Category	<i>n</i>	% of Agency Tweets
Static news	93	33.1%
Community policing	70	24.9%
Real-time news	40	14.2%
Other	30	10.7%
Crime prevention / safety message	19	6.8%
Solicitation for community assistance	17	6.0%
Self-promotion of agency communications channel	9	3.2%
Humor	3	1.1%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

The 281 original tweets were also examined to see if they contained any of the following elements: a photo, a video (in either native Twitter format, or with a link to an external video source like YouTube or Vimeo), a hashtag, and/or a URL. The results appear in Table 37.

Table 37. PAPD Elements of Original Tweets

Tweet Element	<i>n</i>	% of Agency Tweets
Picture <i>and</i> URL	96	34.2%
Picture only	77	27.4%
Picture <i>and</i> hashtag	52	18.5%
Picture, hashtag, <i>and</i> URL	32	11.4%
Words only	13*	4.6%
Hashtag only	4*	1.4%
Video (native) only	2	<1%
Video (external) only	2	<1%
Video (native) <i>and</i> URL	1	<1%
Video (external) <i>and</i> URL	1	<1%
Video (external) <i>and</i> hashtag	1	<1%
URL only	0	0%
Video (native) <i>and</i> hashtag	0	0%
Video (external) <i>and</i> hashtag <i>and</i> URL	0	0%
URL <i>and</i> hashtag	0	0%

Note that, of the 17 tweets that contained text only, 12 were quote tweets, which do not allow the insertion of pictures or video. PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Another way to organize Table 37 is to separate the 281 original tweets into those that contain a visual element (a picture or a video), and those that contain text only (including words, hashtags, and URLs). The results appear in Table 38.

Table 38. PAPD Breakdown of Original Tweets—Visual versus Text-Only Elements

Category	<i>n</i>	% of Agency Tweets
Visual element	264	94.0%
Text only	17	6.0%

Note that of the 17 tweets that contained words only, 12 of them were quote tweets, which do not allow the insertion of pictures or video. PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

4. Details on PAPD Two-Way Engagement

Of the 490 reply tweets the PAPD sent during the study period, 437 were sent in response to another Twitter user first mentioning the PAPD account. Of these, 339 were other Twitter users who had first mentioned the PAPD account, with 235 of those being self-initiated inquiries and 104 being sent in response to an underlying PAPD tweet. The remaining 98 reply tweets sent by the PAPD were additional tweets following up on the same conversation (for example, if user @joesmith sent a reply to an underlying PAPD tweet, PAPD may have sent an initial tweet in response, and then two additional tweets to provide more information). Also, the PAPD self-initiated 53 reply tweets to other Twitter users, which is the functional equivalent of initiating a conversation or interjecting oneself into an existing conversation. Table 39 shows the categories of user self-initiated tweets sent to PAPD to which the agency responded.

Table 39. PAPD Categories of User Self-Initiated Tweets

Category	<i>n</i>	%
Inquiry	63	26.8%
Crime / traffic complaint	57	24.3%
Community policing	56	23.8%
Thanking the police	41	17.4%
Unknown	10	4.3%
Personnel complaint	5	2.1%
Media inquiry	2	<1%
Untrue allegation	1	<1%
Condolences	0	0%

See <https://twitter.com/PaloAltoPolice>.

How the agency chose to respond to these tweets self-initiated by users was also studied. The PAPD's initial reply tweet to each inquiry can be classified into the categories shown in Tables 40–47.

Table 40. PAPD Agency Response user Self-Initiated Tweets—Inquiry

Category of the PAPD reply tweet	<i>n</i>	%
Provide information	49	77.8%
Direction to call/email	9	14.3%
General acknowledgment / thank-you	3	4.8%
Conversational	1	1.6%
Ask question	1	1.6%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Table 41. PAPD Agency Response to User Self-Initiated Tweets—Crime/
Traffic Complaint

Category of the PAPD reply tweet	<i>n</i>	%
Direction to call/email	25	43.9%
Provide information	10	17.5%
General acknowledgement / thank-you	9	15.8%
Conversational	8	14.0%
Ask question	3	5.3%
Humor	2	3.5%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Table 42. PAPD Agency Response to User Self-Initiated Tweets—
Community Policing

Category of the PAPD reply tweet	<i>n</i>	%
Conversational	35	62.5%
General acknowledgement / thank-you	10	17.9%
Humor	9	16.1%
Direction to call/email	1	1.8%
Provide information	1	1.8%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Table 43. PAPD Agency Response to User Self-Initiated Tweets—Thanking
the Police

Category of the PAPD reply tweet	<i>n</i>	%
Conversational	31	75.6%
General acknowledgement / thank-you	9	22.0%
Provide information	1	2.4%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Table 44. PAPD Agency Response to User Self-Initiated Tweets—Unknown

Category of the PAPD reply tweet	<i>n</i>	%
Conversational	5	50.0%
Provide information	3	30.0%
Direction to call/email	2	20.0%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Table 45. PAPD Agency Response to User Self-Initiated Tweets—Personnel Complaint

Category of the PAPD reply tweet	<i>n</i>	%
Provide information	3	60.0%
Direction to call/email	2	40.0%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Table 46. PAPD Agency Response to User Self-Initiated Tweets—Media Inquiry

Category of the PAPD reply tweet	<i>n</i>	%
Provide information	1	50.0%
Direction to call/email	1	50.0%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Table 47. PAPD Agency Response to User Self-Initiated Tweets—Untrue Allegation

Category of the PAPD reply tweet	<i>n</i>	%
Provide information	1	100.0%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

Of the 104 tweets sent by users in response to an underlying tweet from the PAPD, and to which the PAPD responded in two-way conversation, the categories of original tweets from the agency that generated responses are shown in Table 48.

Table 48. PAPD Categories of Original Tweets Generating a Two-Way Conversation

Category	<i>n</i>	% of User Tweets
Community policing	38	36.5%
Static news	31	29.8%
Real-time news	15	14.4%
Solicitation for community assistance	5	4.8%
Crime prevention / safety message	5	4.8%
Self-promotion of agency communications channel	5	4.8%
Humor	3	2.9%
Other	2	1.9%

See <https://twitter.com/PaloAltoPolice>.

Of the 281 original tweets sent by the PAPD, the number of tweets that generated at least one reply from another user is shown in Table 49.

Table 49. PAPD Percentage of Original Tweets Receiving at Least One Reply

Original Tweets from the PAPD (<i>n</i> =281)	<i>n</i>	%
Received zero replies	152	54.1%
Received at least one reply from another user	129	45.9%

See <https://twitter.com/PaloAltoPolice>.

For the 129 original tweets that generated responses from users, the categories of those tweets that generated responses are shown in Table 50.

Table 50. PAPD Categories of Original Tweets Generating at Least One Reply

Category	<i>n</i>	% of User Tweets
Community policing	40	31.0%
Static news	38	29.5%
Real-time news	17	13.2%
Other	12	9.3%
Solicitation for community assistance	10	7.8%
Crime prevention / safety message	5	3.9%
Self-promotion of agency communications channel	4	3.1%
Humor	3	2.3%

See <https://twitter.com/PaloAltoPolice>.

For the 129 original tweets that generated responses from users, some received multiple replies from some users. In total, between those 129 tweets, there were 251 replies. The categories of the original tweets from the PAPD that generated responses are shown in Table 51.

Table 51. PAPD Total Replies by Category of Original Tweet

Category	<i>n</i>	%
Community policing	87	34.7%
Static news	66	26.3%
Real-time news	34	13.5%
Other	20	8.0%
Solicitation for community assistance	18	7.2%
Self-promotion of agency communications channel	9	3.6%
Crime prevention / safety message	9	3.6%
Humor	8	3.2%

See <https://twitter.com/PaloAltoPolice>.

Of the 251 unique replies generated by the PAPD original tweets, users responded as shown in Table 52 to tweets with text, pictures, videos, hashtags, and URLs.

Table 52. PAPD Replies to Original Tweets by Various Elements

Elements of Underlying Agency Tweet Generating User Replies	<i>n</i>	% of Tweets
Picture only	94	37.5%
Picture <i>and</i> URL	70	27.9%
Picture <i>and</i> hashtag	54	21.5%
Picture, hashtag, <i>and</i> URL	29	11.6%
Video (native) only	2	<1%
Words only	2*	<1%
Video (external) only	0	0%
Hashtag only	0	0%
URL only	0	0%
Video (native) <i>and</i> hashtag	0	0%
Video (external) <i>and</i> hashtag	0	0%
Video (external) <i>and</i> hashtag <i>and</i> URL	0	0%
URL <i>and</i> hashtag	0	0%

Note that of the two replies to agency tweets that contained words only, the underlying agency tweets were both quote tweets, which do not allow the insertion of pictures or video. See <https://twitter.com/PaloAltoPolice>.

Another way to organize Table 52 is to separate the 251 unique replies by whether the underlying PAPD original tweet contained a visual element (a picture or a video) or text only (including words, hashtags, and URLs), as shown in Table 53.

Table 53. PAPD Breakdown of Replies to Original Tweets—Visual versus Text-Only Elements

Category	<i>n</i>	% of Tweets
Visual element	249	99.2%
Text only	2	<1% ⁴

See <https://twitter.com/PaloAltoPolice>.

The PAPD also self-initiated 53 reply tweets to other Twitter users, which is the functional equivalent of initiating a conversation or interjecting oneself into an existing conversation. The categories of the initial PAPD reply tweet are shown in Table 54.

Table 54. PAPD Categories of Agency Self-Initiated Reply Tweets to Other Users

Category of the PAPD reply tweet	<i>n</i>	%
Conversational	26	49.1%
Provide information	10	18.9%
Humor	8	15.1%
General acknowledgement / thank-you	4	7.5%
Ask question	3	5.7%
Direction to call/email	1	1.9%
Support for another agency	1	1.9%

PAPD Twitter archive downloaded October 21, 2015. See <https://twitter.com/PaloAltoPolice>.

B. ANALYSIS OF USAGE PATTERNS

The PAPD is very active on Twitter, with almost four times the number of tweets sent during the study period than the SCPD, and 165 more than the MVPD. Most of the PAPD original tweets fell into the categories of news (47.3 percent for combined static news and real-time updates) and community policing (24.9 percent). The PAPD had a small percentage of retweets during the study period, at only 4 percent. They used the quote tweet feature 12 times (1.5 percent of total tweets).

The PAPD account has a high degree of two-way engagement, with over 63 percent of the agency tweets coming in the form of replies. The PAPD received (and replied at least once to) 235 separate self-initiated tweets sent by users directly to them. Most often, users were making an inquiry of some sort to the department, complaining about crime or traffic (five, in fact, were complaining about police personnel), or talking about a community policing initiative. These 235 tweets were the functional equivalent of a user starting a two-way conversation with the police department. The PAPD replied at least once to each of these 235 tweets, most often by providing information to the user, directing them to make a phone call or send email for follow-up, or responding with a conversational reply.

It should be noted that the PAPD started a nationwide community policing initiative via Twitter in the middle of the study period, called #CopsLoveLemonadeStands.²⁴⁹ This campaign, which encouraged the public to report lemonade stands operated by children via social media so officers could visit them, was responsible for a number of tweets (both from users and the PAPD) in the community policing category during this study.

At least one user reply was generated by 129 of the PAPD's 281 original tweets (45.9 percent). Tweets about community policing or news (73.7 percent) were most likely to spur these replies. Of the 104 separate tweets sent by users in response to an underlying tweet from the PAPD (and to which the PAPD replied in two-way

²⁴⁹ Katie Nelson, "Cops Love Lemonade Stands: Palo Alto Police Launch Social Media Campaign," *San Jose Mercury News*, June 30, 2015, http://www.mercurynews.com/news/ci_28407964/cops-love-lemonade-stands-palo-alto-police-launch-social-media-campaign.

conversation), 80.7 percent were generated by tweets about community policing or news. Agency tweets about solicitations for community assistance, crime prevention/safety messages, and self-promotions of agency communications channels received far fewer replies from users.

The PAPD sent an additional 98 reply tweets to users as part of ongoing, back-and-forth conversations (i.e., the agency sent multiple replies to the same user). Examples of such conversations follow in Chapter VI.

The PAPD almost always included a visual element in their agency tweets, with 94.0 percent of their original tweets containing a picture or video. Of the remaining 6.0 percent of their original tweets ($n=17$) that contained words only, 12 of those were quote tweets (which do not allow the insertion of pictures or video), and the remaining five were sent in a breaking news situation as part of a six-tweet package to push out a large amount of information. Users were more likely to reply to tweets that contained visual elements, as 99.2 percent of the 251 user replies to underlying agency tweets were written in response to agency tweets that contained pictures or video.

The PAPD self-initiated 53 reply tweets that were directed to other users; this is the functional equivalent of the agency beginning a two-way conversation or interjecting itself into a pre-existing conversation between other users.

The PAPD provided real-time information on 13 separate occasions during the study period. The topics of these real-time updates ranged from road closure information, to an explosion downtown, to power outages, to a critical missing person, to a call involving the bomb squad detonating several old grenades that had been discovered in a residential neighborhood. As a result of the last incident, which occurred on August 6, the PAPD's Twitter account experienced one period of exceptional follower growth (with 96 new followers gained). This is examined in Section J of Chapter VI.

C. CONCLUSION

The PAPD Twitter account regularly engages users in two-way dialogue, with nearly two-thirds of their tweets sent in response to other users. There does not appear to

be an obvious correlation between their amount of two-way engagement and their number of followers. Users regularly self-initiate conversations with the PAPD, and receive informative responses from the agency. The PAPD also regularly self-initiates conversations with users. Additional analysis of the police agency data generated in the three case studies follows in Chapter VI.

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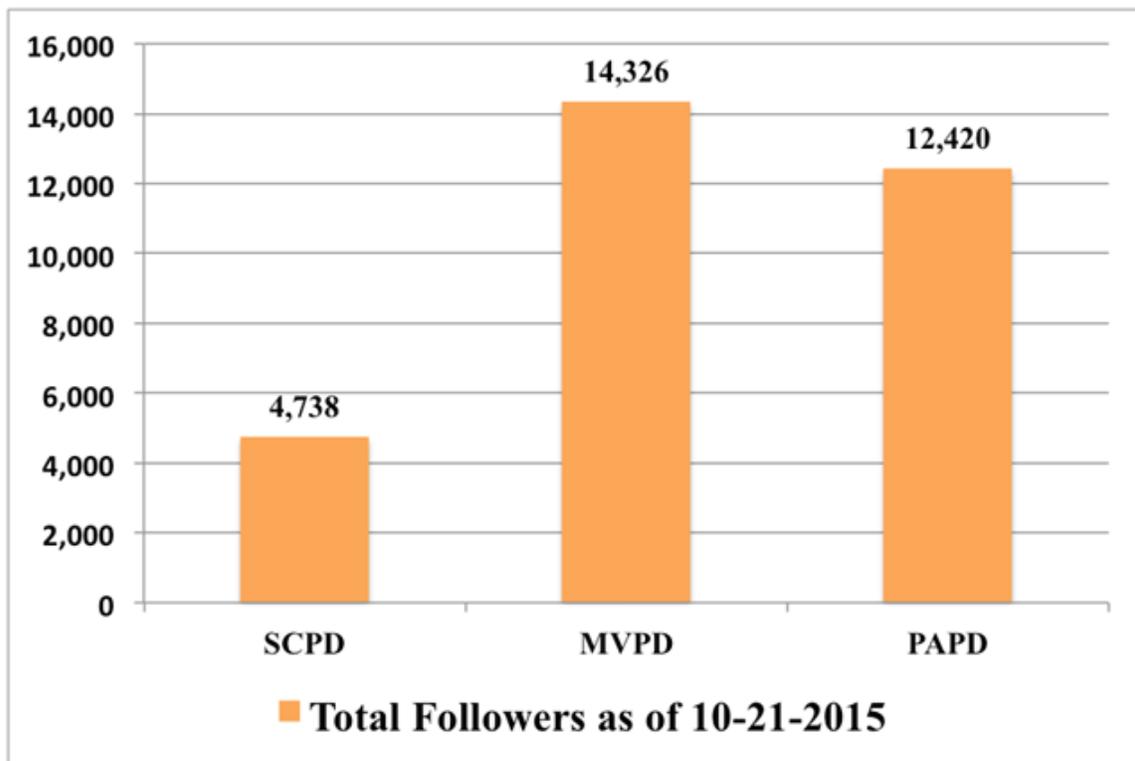
VI. ANALYSIS

This chapter synthesizes the results from all three case studies and explores the implications of these findings.

A. BASIC COMPARISON BETWEEN AGENCIES

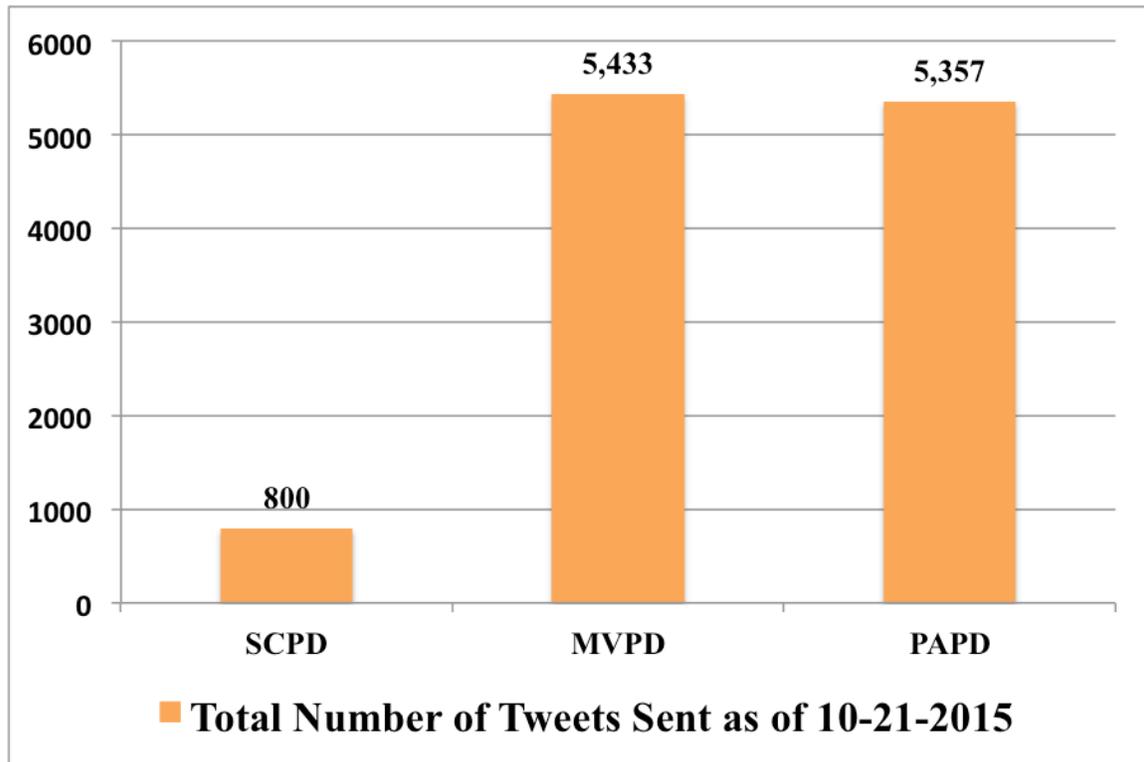
A comparison of the Santa Clara Police Department (SCPD), the Mountain View Police Department (MVPD), and the Palo Alto Police Department (PAPD) shows that there are major differences between how the agencies choose to use Twitter. From an overall perspective, the agencies compare as shown in Figures 16 and 17.

Figure 16. Total Number of Agency Followers—Lifetime



SCPD, MVPD, and PAPD account analytics accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

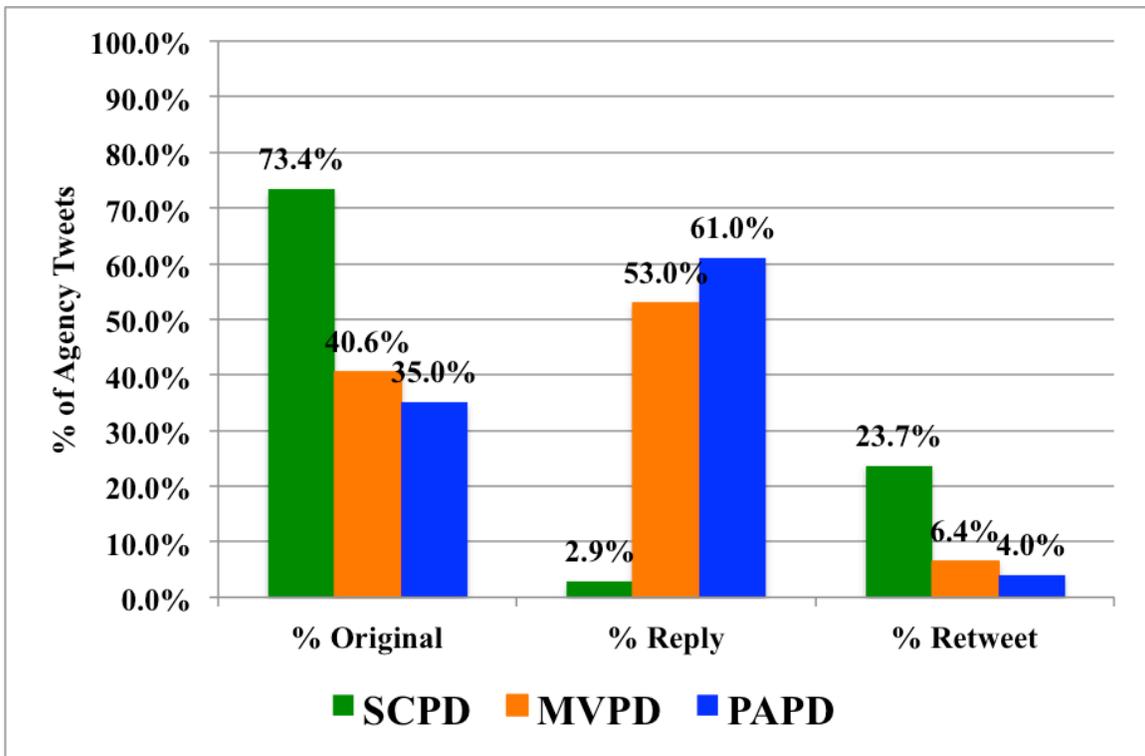
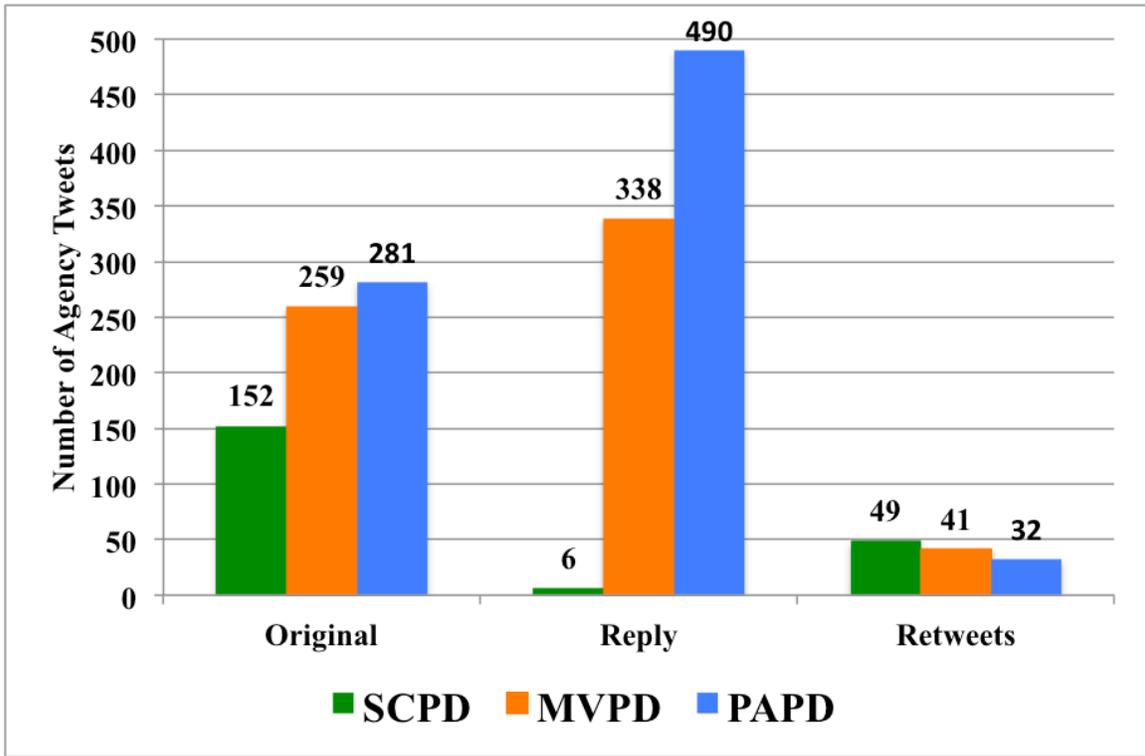
Figure 17. Total Number of Tweets Sent—Lifetime



SCPD, MVPD, and PAPD account analytics accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

The amount of two-way engagement was the primary difference between the agencies over the six-month study period. The two-way engagement is indicated by the number of reply tweets in relation to original tweets and retweets, as shown in Figure 18.

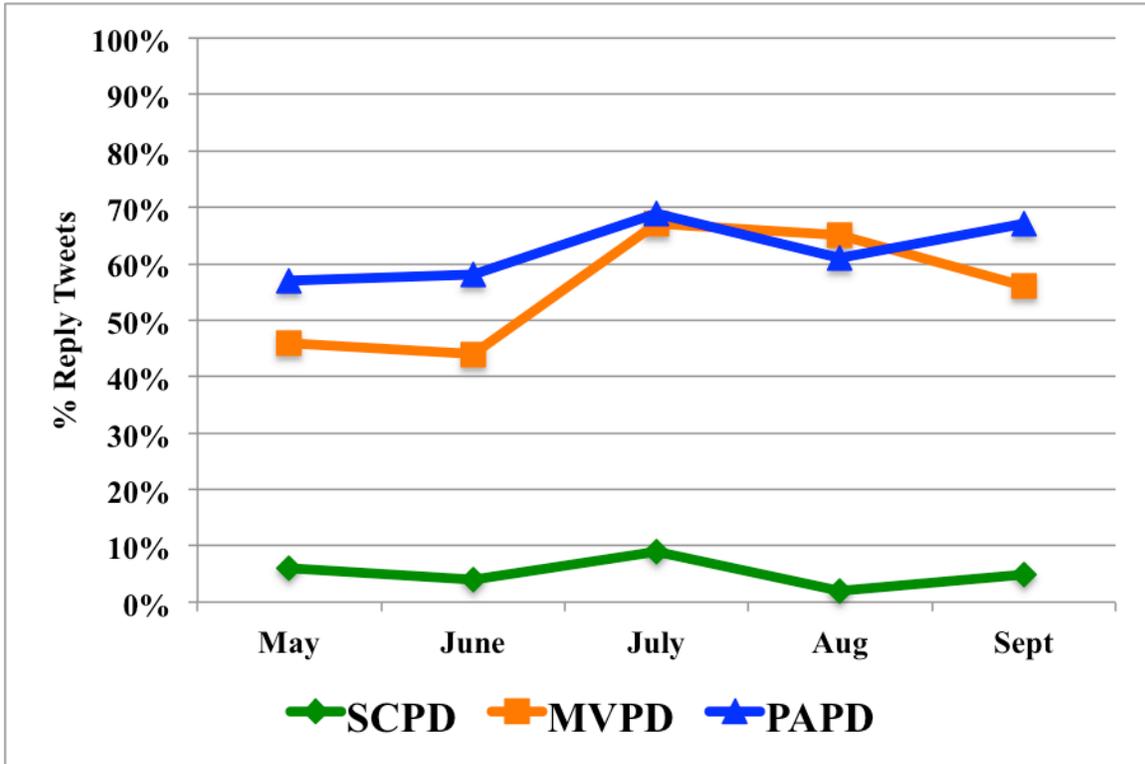
Figure 18. Agency Tweets—Original, Reply, and Retweets



SCPD, MVPD, and PAPP archives downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

The three departments' two-way engagement rates are shown in Figure 19.

Figure 19. Two-Way Engagement Rates



SCPD, MVPD, and PAPD archives downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

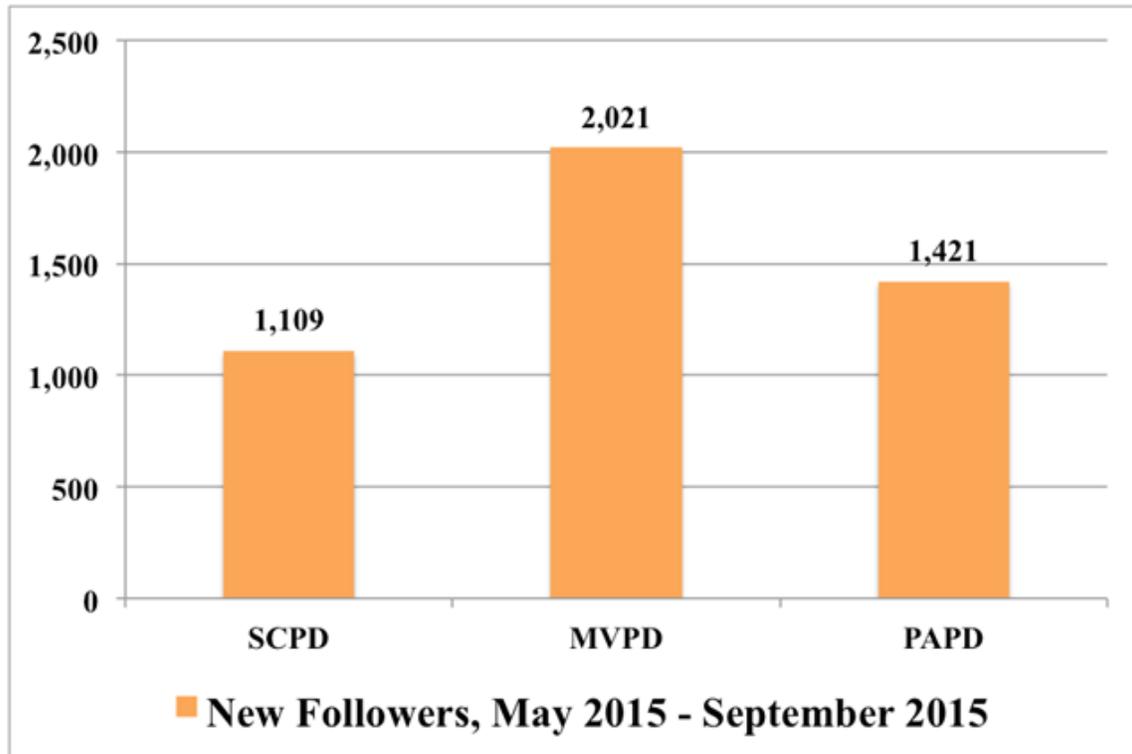
The three agencies' two-way engagement rates remained consistent from month to month. The SCPD ranges from 2 to 9 percent, while the MVPD ranges from 44 to 67 percent and the PAPD ranges from 57 to 69%.

The data from Figures 18 and 19 show that the SCPD subscribes to a one-way communication model on Twitter, while the MVPD and PAPD both use a two-way communication model. This major difference is foundational to the rest of the data examined in this study.

B. TWO-WAY COMMUNICATION AND FOLLOWERSHIP

Over the five full months within the study period, the two agencies using a two-way communication model received more new followers than the agency using a one-way model, as shown in Figure 20.

Figure 20. Total New Followers, May–September 2015

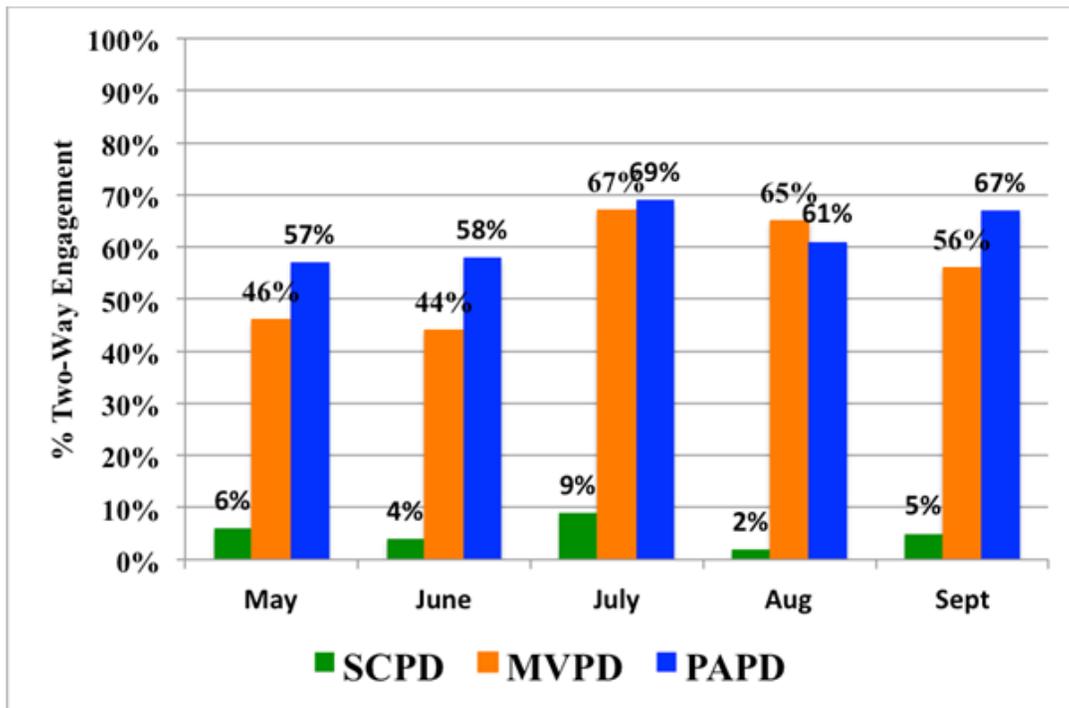
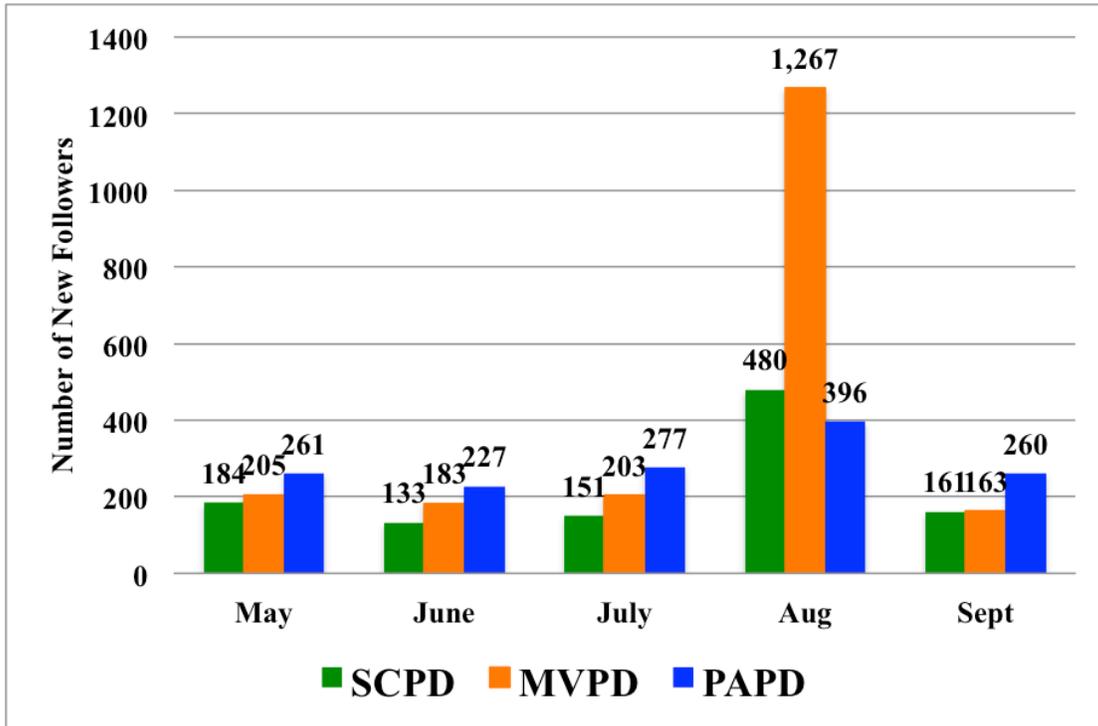


SCPD, MVPD, and PAPD account analytics accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

Another way to view this data is consider that the MVPD obtained 82 percent more new followers than the SCPD, and the PAPD obtained 28 percent more new followers than the SCPD. There are a nearly endless number of variables that could contribute to this difference, of which the rate of two-way engagement is only one. For example, with their larger base of followers, the MVPD and PAPD accounts are reaching more people than the SCPD account with their original tweets, giving more users the opportunity to retweet their content to other users who may then choose to follow them.

When comparing the new follower data on a monthly basis to the rate of two-way engagement to determine if there is a relationship, the data is generally inconclusive. Compare the top and bottom images in Figure 21.

Figure 21. Monthly New Followers and Rate of Two-Way Communication—Agency Comparison



SCPD, MVPD, and PAPD archives and account analytics downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

For both the MVPD and the PAPD, their months with the largest numbers of new followers also happened to be the months in which they both had the highest number of reply tweets. Beyond those months, however, there was no identifiable correlation between the amount of new followers and the rate of two-way communication on a monthly basis. The PAPD had a more consistent number of reply tweets on a monthly basis (the range was 24, from a high of 90 to a low of 66 and an average of 82.6) than did the MVPD (whose range was 73, from a high of 105 to a low of 32 and an average of 63.8). Some months, the agencies received *more* followers with more reply tweets; other months, they received *fewer* followers with more reply tweets. There was no regularly occurring identifiable pattern or relationship.

Data was next examined to determine if there was a relationship between the number of new followers and the number of reply tweets on a daily basis.²⁵⁰ This data was also generally inconclusive, although there may be a direct relationship on some days. For example, on August 15, the MVPD account had their largest single-day gain in followers (536); on this day they also sent their highest number of reply tweets (22, which they also sent on August 11). And on August 7, the PAPD had their largest single-day gain in followers (96); on this day, they also sent 7 reply tweets (a high number for them; they only sent more reply tweets on four other days). However, on August 16, the PAPD account received 37 new followers (its second-highest single-day gain) but sent 0 reply tweets. There are many other factors that contribute to these differences; for example, the agency may have sent an original tweet that was retweeted many times, increasing the exposure of their account and leading to new followers.

²⁵⁰ It should be noted that there are some potential inaccuracies in the daily data. The archive provided by Twitter generally is time-stamped in Coordinated Universal Time (UTC) and not local time. Thus, a 24-hour period as defined by Twitter in UTC may not correspond to the same 24-hour cycle in local time.

The average daily growth rate of the three agencies, excluding their periods of exceptional growth (see Section J), was similar enough that there was no marked difference between the one-way communication model and the two-way communication model, as shown in Table 55.

Table 55. Average Daily Growth Rate with New Followers

Agency	Average Daily Growth Rate with New Followers
Santa Clara	6.32
Mountain View	6.13
Palo Alto	8.70

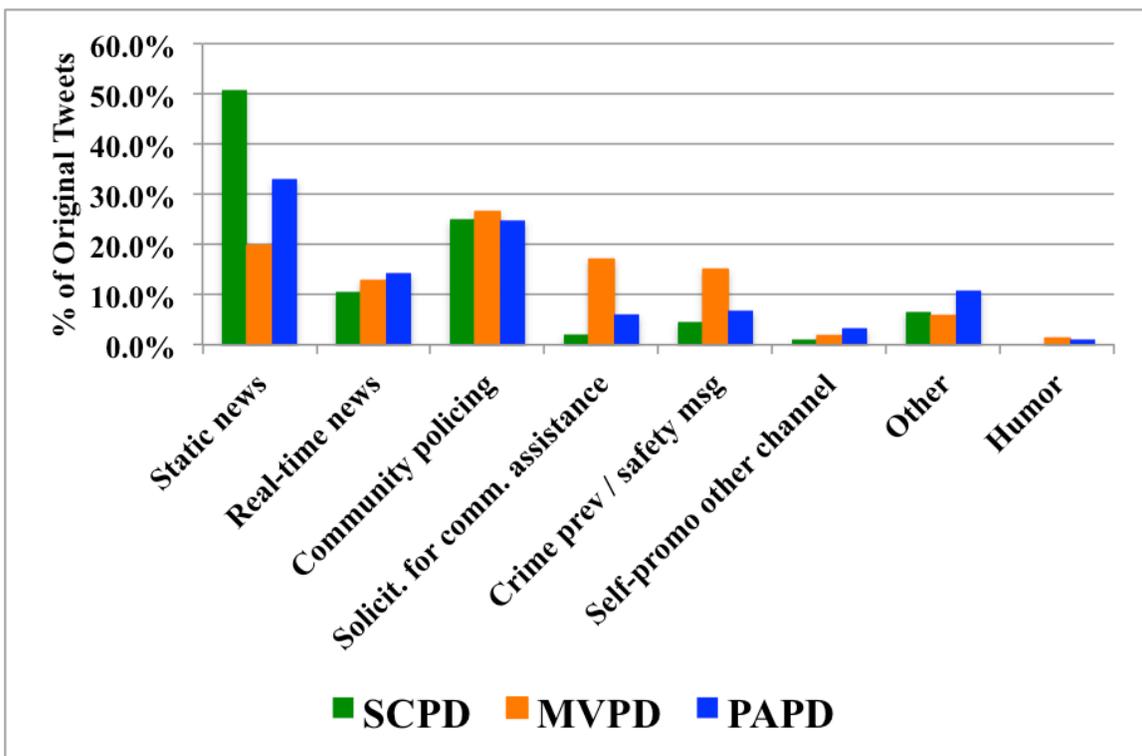
SCPD, MVPD, and PAPD account analytics accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

Because of this average daily growth consistency, the differences between the three agencies examined did not seem to matter. For example, despite broad differences in reply rates or the number of tweets that contained visual elements, the number of average new daily followers remained roughly consistent. Any explanation for this would be purely speculative; perhaps, for example, a general growth in Twitter users in Silicon Valley overall during the same period contributed to the similar levels of growth.

C. CATEGORIES OF ORIGINAL TWEETS THAT GENERATED USER REPLIES

The SCPD and PAPD had the same top three categories of agency tweets: they were most likely to send original tweets about static news, community policing, or real-time news. The MVPD, on the other hand, was most likely to send original tweets about community policing, static news, solicitations for community assistance, and crime prevention/safety messages. The data is shown in Figure 22.

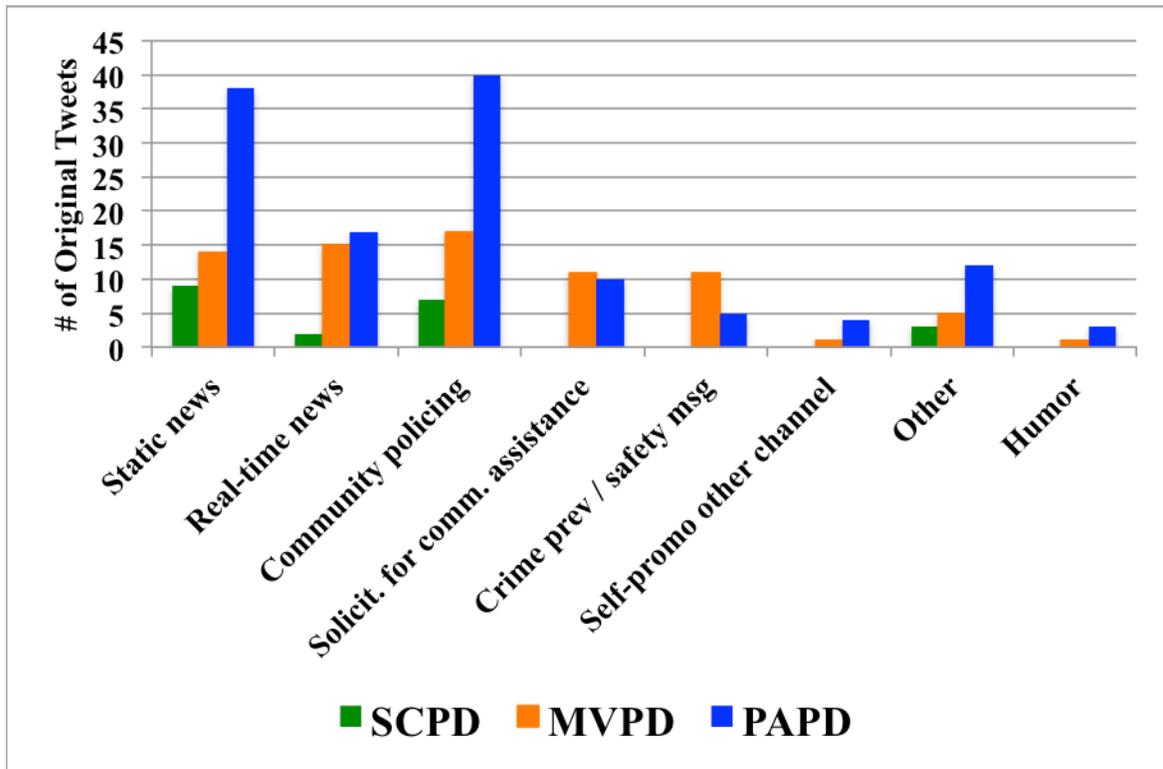
Figure 22. Categories of Original Tweets by Agency



SCPD, MVPD, and PAPD Twitter archives downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

Across the three agencies, users were most likely to reply to original agency tweets about community policing, static news, or real-time news. Figure 23 depicts the number of agency tweets by category that received at least one reply from users.

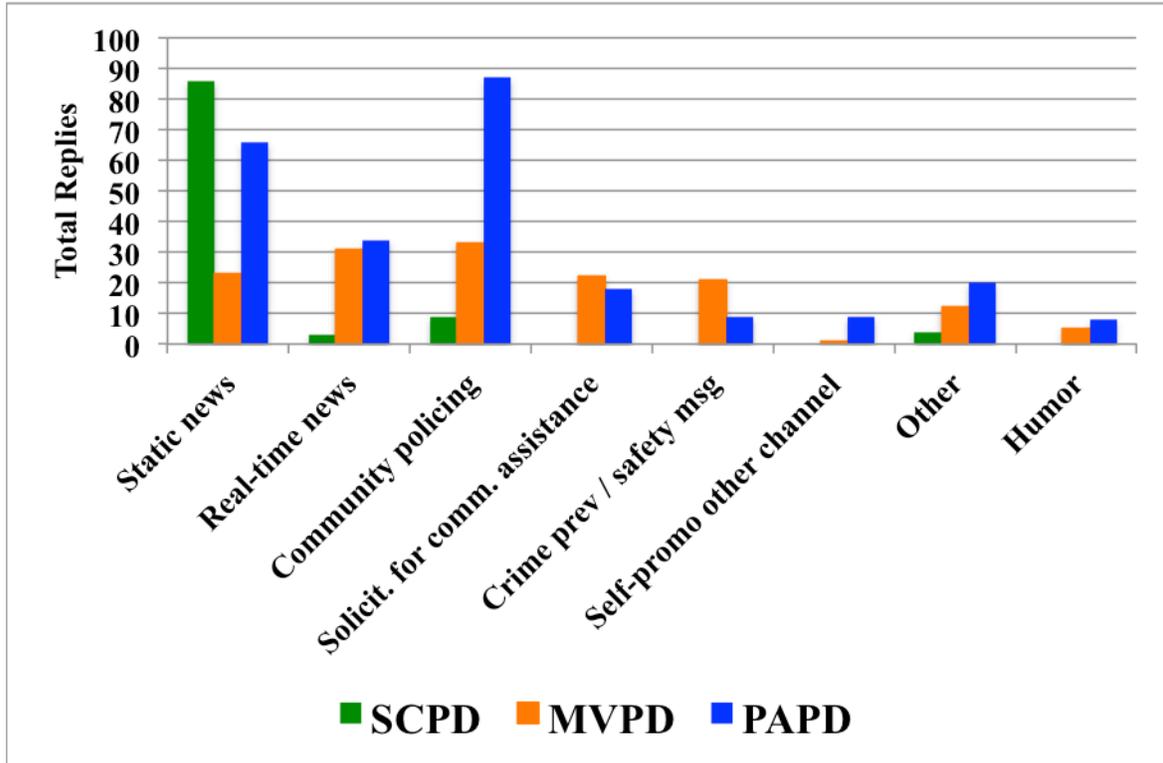
Figure 23. Categories of Original Tweets that Received at Least One Reply



SCPD, MVPD, and PAPD Twitter accounts accessed on various dates throughout December 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

Figure 24 depicts the total number of user replies to agency tweets by category (some users sent multiple replies to the same tweet).

Figure 24. Total Replies by Category of Original Tweet



SCPD, MVPD, and PAPP Twitter accounts accessed on various dates throughout December 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

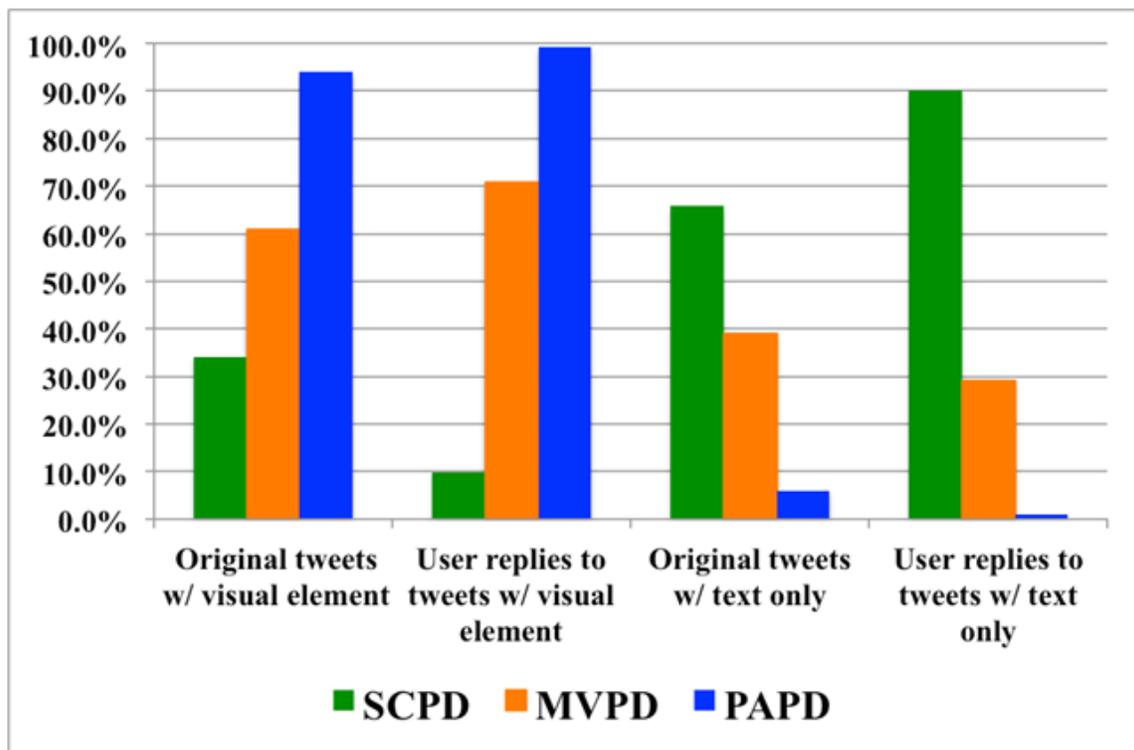
While the MVPD sent many tweets that were either solicitations for community assistance or crime prevention/safety messages, these topics did not generate as many replies from users. That does not mean that tweets in these categories are unimportant or are not widely shared or appreciated, but it does show that they are not as likely to generate opportunities for two-way engagement as tweets about community policing, static news, or real-time news.

Agencies looking to increase opportunities for two-way engagement should consider tweeting about community policing topics, static news, and/or real-time news. Each reply is an opportunity for the agency to respond and engage a user in conversation.

D. VISUAL ELEMENTS OF ORIGINAL TWEETS THAT GENERATED USER REPLIES

The three agencies incorporated pictures and videos to varying degrees in their tweets. For the SCPD, agency tweets with words only generated more replies from users. For the MVPD and the PAPD, agency tweets that included pictures or videos generated more replies from users. A comparison of the agencies, including their total percentages of original tweets (either those with words only, or those with a visual element) and the total percentage of user replies they generated is shown in Figure 25.

Figure 25. Components of Original Tweets that Generated User Replies



SCPD, MVPD, and PAPD Twitter accounts accessed on various dates throughout December 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

There is no consistent pattern discernible within these data sets. For the PAPD, for example, 99.2 percent of user replies came in response to original agency tweets that included a visual element; yet, considering 94.0 percent of the PAPD’s original agency tweets included a visual element, the fact that the majority of replies would come in

response to those tweets is expected. The MVPD, which had more balance between the categories of original agency tweets (61.0 percent with a visual element, 39.0 percent with text only), received a roughly correlative number of user replies (70.9 percent to tweets with a visual element, and 29.1 percent to tweets with text only). For the SCPD, the balance between the categories of original agency tweets was 65.8 percent with text only and 34.2 percent with a visual element, yet they received a spike in user replies (90.2 percent to tweets with text only, and 9.8 percent to tweets with a visual element).

Examining the data for the SCPD more closely to determine the cause for that spike, 67 of the 92 replies they received from text-only tweets came in response to a single original tweet about the arrest of a professional football player; this original tweet went viral, being retweeted by users almost 800 times. This indicates that the subject matter of a tweet can make a substantial difference in engagement, regardless of if a tweet has a visual element. If a tweet “goes viral” and gains exponential reach, it is more likely to receive responses from users, if only due to the much larger number of users who view the tweet and choose to interact with it.

For agencies looking to increase opportunities for two-way engagement, the data in this section offers no suggestions about whether or not to include a visual element. If tweets that include a visual element receive a higher ratio of visibility (due to a higher number of retweets) is another matter entirely and outside the scope of this study, though it should be noted that increased visibility for the agency’s Twitter account gives more opportunities for new users to follow the account. This is an opportunity for future study (discussed in Chapter VII).

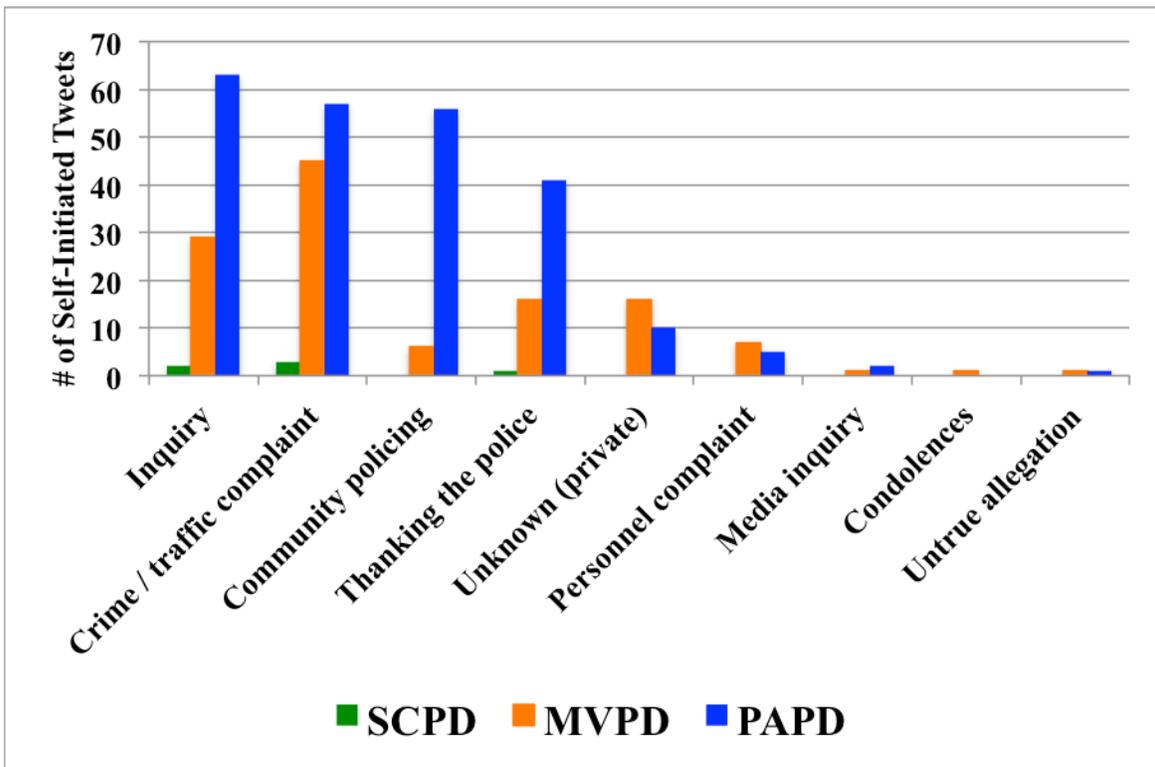
E. USERS SELF-INITIATING CONTACT WITH THE POLICE

Many users self-initiated sending tweets directly to the police agencies for various reasons; this is the Twitter equivalent of a resident picking up a telephone and calling the police to communicate a concern, ask a question, or otherwise express an opinion. All three agencies received such self-initiated inquiries, though the two-way communication model used by the MVPD and the PAPD meant they responded to many more than the SCPD. It should be noted that the number of unanswered self-initiated inquiries was not

studied; this is outside the scope of this study and there is no way to easily obtain such data.

There were similarities between the types of inquiries the three agencies received. Most frequently, users asked a question of the police (e.g., “What is happening at First and Main right now?”) or complained about a crime problem or a traffic problem. The breakdown of the inquiry categories is shown in Figure 26.

Figure 26. Categories of Self-Initiated Tweets Sent by Users to the Police



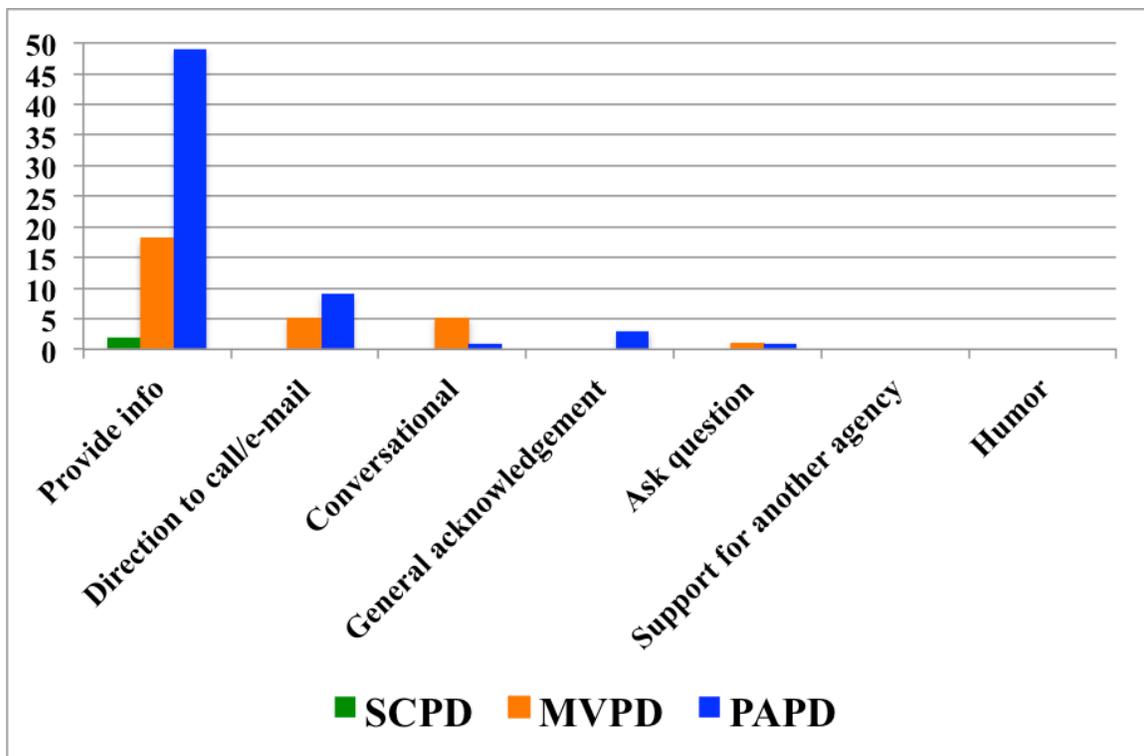
SCPD, MVPD, and PAPD Twitter accounts accessed on various dates throughout December 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

User self-initiated tweets containing inquiries about events at a particular location that may suggest that agencies should consider providing more content about what their officers are doing in real-time. The agency cannot foresee user self-initiated tweets about crime and traffic complaints, but it is reasonable for the agency to expect inquiries from the public if a large police presence develops at a particular location in response to a critical incident.

The PAPD responded to far more self-initiated user tweets than the other two departments, but it is not known if they received more such self-initiated tweets, or if they just chose to respond to more of them than did the other agencies. Also, it should be noted that the high number of “community policing” inquiries to the PAPD may be the result of their #CopsLoveLemonadeStands campaign, as described in Chapter V, as many users were reporting the locations of lemonade stands in real-time so officers could visit them.

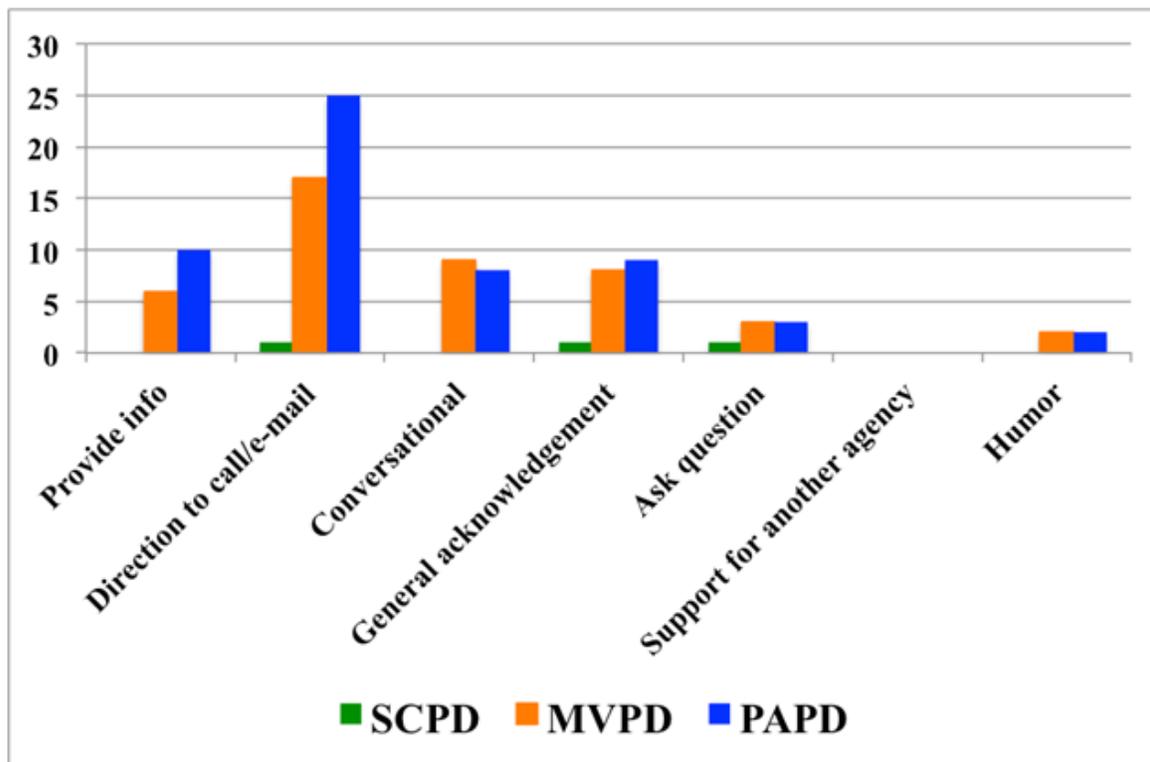
Specifically examining the two highest categories for all three agencies, the agencies chose to respond in a similar manner as shown in Figure 27 (inquiries) and Figure 28 (complaints about crime or traffic).

Figure 27. Agency Responses to User Self-Initiated Tweets—Inquiry



SCPD, MVPD, and PAPD Twitter archives downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

Figure 28. Agency Responses to User Self-Initiated Tweets—Crime/Traffic Complaint



SCPD, MVPD, and PAPD Twitter archives downloaded October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

The data here shows that the agencies were most likely to answer an inquiry by providing information, and were most likely to answer a complaint about crime or traffic by directing the user to actually call or email the police to provide more details. In either case, the user received a response from the agency via social media (regardless of if social media was used to provide a simple answer or to invite an in-person call or an email), so two-way engagement occurred. Either method fulfills the recommendations contained in the Ferguson report of being responsive to the public and/or asking for information from the public.²⁵¹ By directing the user to call or email the police to provide more details, the agency is using social media “in concert with other non-digital communication channels,” as outlined in Annex R of ESF 15.²⁵²

²⁵¹ U.S. Department of Justice, *After-Action Assessment*, 102.

²⁵² U.S. Department of Homeland Security, *Emergency Support Function 15*, R-1.

Figure 29 shows an example of an agency responding to an inquiry by providing information.

Figure 29. Example of SCPD Responding to User Self-Initiated Tweet (Inquiry)



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD>.

Figure 30 shows an example of an agency directing a user to call with additional information.

Figure 30. Example of MVPD Responding to User Self-Initiated Tweet (Direction to Call/Email)



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Users' self-initiated reports of crime or traffic problems that received a response from an agency were frequent for both the MVPD (45 times) and the PAPD (57 times). Users utilized Twitter to report benign offenses like illegally parked vehicles, loud neighbors, or stuck traffic signals (as shown in Figure 30). But they also used Twitter to report more serious incidents that would necessitate an emergency response, such as explosions, gunshots, vehicle collisions, in-progress thefts, in-progress disturbances, and broken water pipes.

This raises an intriguing problem for police agencies; if users are reporting emergencies via Twitter, yet the agency does not promptly see the tweet and send emergency resources, what sort of civil liability could the agency incur? All three agencies studied here include a phone number for their dispatch center in their Twitter

profile; both the MVPD and the SCPD also include admonitions that tweets are not monitored 24/7, and the PAPD account includes a direction to report crime to dispatch. Yet if agencies are continually responsive to users on Twitter, it may create a public expectation that they are always monitoring their accounts and can receive emergency reports via tweets. This may be an unintended consequence of successful two-way engagement, and bears further study (see Chapter VII).

The way these three agencies replied to users self-initiating contact with the police is a fantastic use of two-way communication. During the study period, the three agencies responded to a total of 363 self-initiated contacts by users. Those users could have, instead, called the front desk of the police station, or dispatch, or even 9–1-1 to communicate their concerns, ask their questions, or otherwise express their opinions. Rather, because the agencies were present and engaged on Twitter, the users received a response via social media. Considering the widespread use of social networking sites as described in Section A of Chapter II, if the public is using social media to communicate with the police, then it follows that police agencies should be willing to use social media to answer them. For agencies looking to increase opportunities for two-way engagement, responding to such inquiries and providing answers and information is a great way to demonstrate responsiveness, accessibility, and willingness to engage with users in a public way for all to see.

F. METHOD OF RESPONDING

Both the MVPD and the PAPD used more than half of their examined tweets to respond to other users, but they employed contrasting methods to do so.

There are multiple ways that an agency can send a “reply” tweet to another user. The first way is as a *direct reply*, shown in Figure 31.

Figure 31. Example of PAPD Direct Reply



Source: “Palo Alto Police Twitter,” accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

A direct reply, which can be identified by the agency beginning the reply tweet with the “@” sign of the recipient’s Twitter handle, is *not* sent to all of the agency’s followers. Instead, while it appears on the agency’s Twitter account and can be publicly viewed by anyone who elects to read through all of an agency’s tweets, it only appears in the feed of anyone who follows both parties (i.e., the agency and the user to whom the agency is responding). The user receives a notification that the agency replied. PAPD chose this method to send all of their replies during the study period, save one. Their followers did not see any of their two-way engagement on their timeline, except for a single reply (or if they also followed the account to which the PAPD was replying).

The second way an agency can send a “reply” tweet to another user is a *period reply*, as shown in Figure 32.

Figure 32. Example of MVPD Period Reply



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

A period reply, which can be identified by the first character of the tweet being a period, immediately followed by the recipient’s @ Twitter handle, sends the reply to *all* of the agency’s followers; it essentially turns a reply tweet into an original tweet. If a follower of the MVPD were to receive the tweet in Figure 32, they would also be able to see easily the underlying tweet to which MVPD is responding. It is important to note that *any* character (not just a period) other than the “@” symbol will accomplish this same action, though Twitter users most often use a period. In this study, a period reply is considered a reply tweet and not an original tweet. MVPD used this method of replying 28 times during the study period (in contrast, the PAPD used this method once, and the SCPD did not use it at all).

The third way an agency can send a “reply” tweet to another user is a *creative reply*, as shown in Figure 33.

Figure 33. Example of MVPD Creative Reply



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

A creative reply, which is challenging to identify easily, is a reply in which the agency embeds the recipient’s Twitter handle in the middle of their tweet. This sends the reply to *all* of the agency’s followers, yet makes the reply look like an original tweet. If a follower of the MVPD were to receive the MVPD’s tweet in Figure 33, they would also be able to see the underlying tweet to which the MVPD is responding. In this study, a creative reply is considered a reply tweet and not an original tweet. MVPD used this method of replying 57 times during the study period (in contrast, neither the PAPD nor the SCPD used it at all).

The MVPD is unique in this study as it is the only agency to regularly make use of the period reply and the creative reply. By structuring their reply tweets in this manner, they are essentially putting their two-way responsiveness on display for all their followers to see. While there is no way to know for sure, this may be a method by which the MVPD generates even more two-way engagement than they otherwise would, since their followers are able to regularly see them responding to inquiries from other users. By contrast, while the PAPD sent more overall reply tweets than the MVPD, their choice to use the direct reply method on all of their replies except one shielded their followers from seeing their high level of two-way engagement with others.

Agencies looking to increase opportunities for two-way engagement must make a strategic decision about which of the three reply methods to use (or, like the MVPD, to use all three methods in differing situations). While there may be a benefit to using the period reply or the creative reply to increase public visibility of two-way engagement and potentially to have an effect on the public's perception of the agency, there may also be a negative effect of introducing user-specific tweets to all of the agency's followers. Tweets sent as period replies or creative replies adds to the influx of an agency's tweets on their followers' timelines; if followers get accustomed to reading individual replies to other users, they may be less inclined to pay attention to the agency's tweets.

The MVPD, however, seems to exercise great care in choosing which reply method to use in each situation; issues of potential concern to the broader community, or ones that put the agency's accountability on public display (such as in the MVPD creative reply in Figure 33), merit a creative reply or a period reply. Tweets that may be more appropriately tailored to an individual and those that are not of potential concern to the broader community merit a direct reply.

G. QUOTE TWEETS

Quote tweets are a different way to share other users' Twitter content, and are essentially the equivalent of retweets but with commentary added by the user. Figure 34 shows an example.

Figure 34. Example of MVPD Quote Tweet



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD/status/608836025192845312>.

In this example, the MVPD quotes a PAPD tweet, adds additional commentary, and then sends it to their followers. In this study, a quote tweet is considered an original tweet and not a reply tweet or a retweet. Quote tweets are not able to accommodate pictures or video.

All three agencies used the quote tweet feature, though the MVPD used it most extensively (76 quote tweets, compared to 12 each for both the SCPD and the PAPD). The feature allows users to see the quoted tweet, and they can choose to easily follow that

Twitter account if it is of interest to them. The MVPD often quoted tweets from the Mountain View Fire Department's account, as well as the individual Twitter accounts of two MVPD officers, which served to advertise those affiliated accounts to their followers. It also allows the sending agency to add commentary specific to their jurisdiction and to better tailor the quoted tweet's message to their own followers, increasing the likelihood their followers will share or otherwise engage with the tweet.

Quote tweets did not generate many replies from users. Of the 76 quote tweets sent by the MVPD, they generated only 19 replies from users. Of the 12 quote tweets sent by the PAPD, only two replies were generated. Of the 12 quote tweets sent by the SCPD, only one reply was generated.

While the quote tweet feature can serve a useful purpose of tailoring another user's message to better suit the agency's needs, the feature does not seem to promote two-way engagement. For agencies looking to increase opportunities for two-way engagement, a better option may be to use original tweets containing pictures or videos, as tweets with visual elements generate more replies from users (as discussed in Section D).

H. ONGOING CONVERSATIONS

Two-way engagement can involve more than an agency simply answering a user's question. Occasionally, two-way engagement turns into a multi-tweet, back-and-forth, Twitter-based conversation. During the study period, no SCPD tweets fell into this category, but the MVPD had 100 ongoing conversations and the PAPD had 98. Essentially, these tweets were additional reply tweets extending a conversation with one or more users (for example, if user @joesmith contacted the agency, the agency may have sent an initial tweet in response, and then two additional tweets to provide more information or continue the conversation).

Figure 35 is an example from the MVPD account that shows the back-and-forth nature of a two-way exchange, as a resident of Mountain View complains about getting kicked out of a picnic area for not having a reservation. Note that the resident self-initiated the conversation with the agency.

Figure 35. Example of User Self-Initiated Tweet that Prompts an Ongoing Conversation



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

The MVPD then responds, and exchanges additional tweets with the user as they work through what occurred and attempt to come up with a resolution, as shown in Figure 36.

Figure 36. Example of MVPD Ongoing Conversation with User



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Note that the MVPD and the user send their tweets in a public manner, such that the entire conversation is visible to all of their followers (a strategy discussed at length in Section F). In the end, the user thanks the police department and praises them for their responsiveness. The MVPD also writes in a conversational manner, thanks the user for bringing the problem to their attention, and apologies for the user's experience.

Another example of these ongoing conversations is shown in Figure 37. This example comes from the PAPD, which received a self-initiated tweet from a Palo Alto resident with questions about their vehicle and a parking complaint.

Figure 37. Example of PAPD Ongoing Conversation with User—Part 1



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

The conversation continues with the resident asking additional questions to clarify police procedures, as shown in Figure 38.

Figure 38. Example of PAPD Ongoing Conversation with User—Part 2



Source: “Palo Alto Police Twitter,” accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Note that, in contrast to the ongoing conversation example from the MVPD in Figure 36, both the PAPD and user in this example sent each of their tweets in the direct reply method, such that the entire conversation only shows on the timelines of people

who follow both accounts. In the end, the user thanks the police department, which responds in a conversational manner.

Compare these two examples to one from the SCPD (see Figure 39), in which they sent an engaging tweet complete with a historical photo and asked their followers a question.

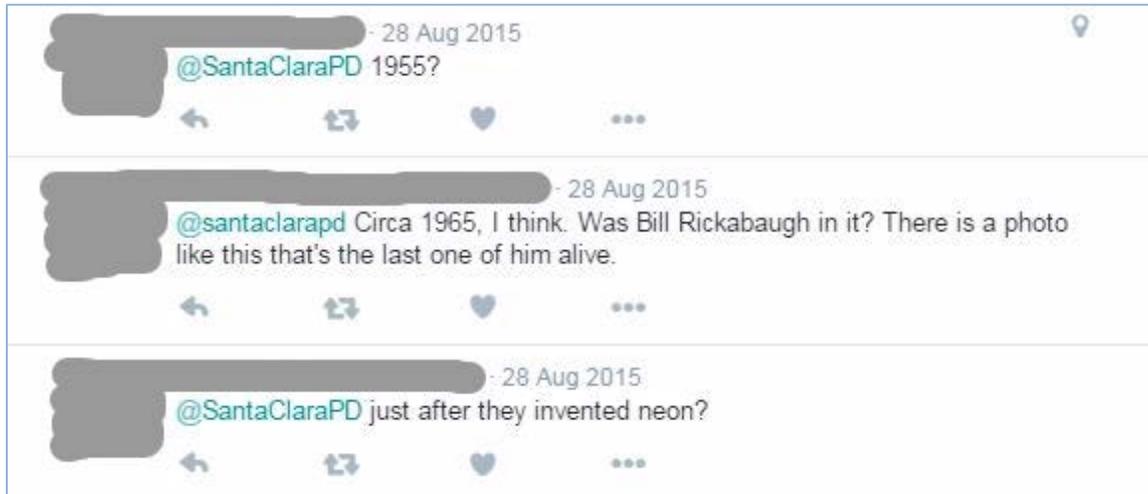
Figure 39. Example of SCPD Tweet that Poses Questions to Followers



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD/status/637429720792043520>.

Three separate users then replied to the tweet and answered the agency’s question, as shown in Figure 40.

Figure 40. Example of Three Responses from Public to SCPD Twitter



Source: “Santa Clara Police Twitter,” accessed October 21, 2015, <https://twitter.com/SantaClaraPD>.

The fact that three users engaged with the police department by writing replies and answering the agency’s question (with one even making a joke) is good. But the SCPD chose not to answer any of these replies, passing up a good opportunity to have an ongoing conversation.

Agencies looking to increase opportunities for two-way engagement should seize the chance to respond when a user initiates a conversation. Much like in-person conversations, Twitter conversations can be back-and-forth and involved, and agencies should take the time necessary to explain themselves and attempt to resolve a user’s problem or properly address an inquiry. Both of the users in the MVPD and PAPD examples from Figures 36–38 received detailed assistance from the police, and it is reasonable to expect that, at minimum, they found the police to be responsive to their concerns. This, in turn, may have an effect on the public’s perception of law enforcement, similar to that noted in Section A of Chapter II with the description of the research performed by Copitch and Fox, and Ruddell and Jones.

I. SELF-INITIATED AGENCY REPLY TWEETS

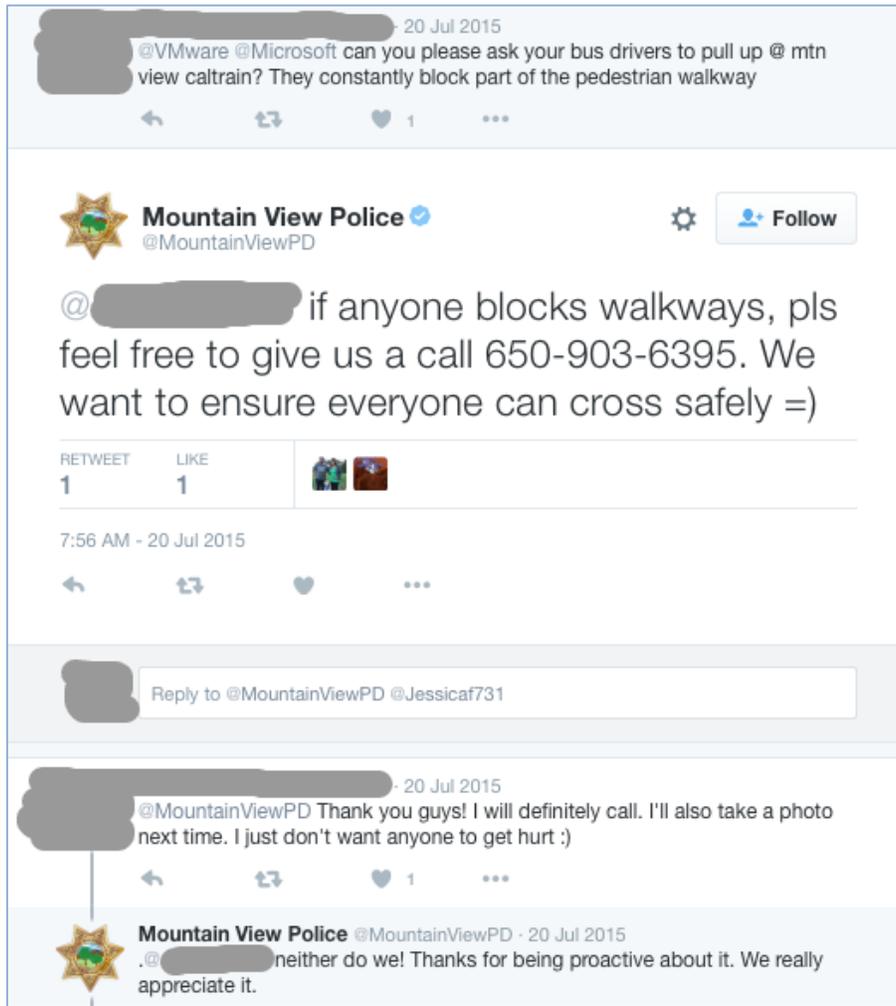
The user does not always need to initiate two-way conversation; the police agency can do so as well. While the SCPD did not self-initiate any such tweets, the other two agencies sent several (MVPD sent 22 unsolicited reply tweets, while PAPD sent 53). Most commonly, the agency's reply tweet took the form of a conversational reply or other acknowledgment of the user's tweet, though the agencies also provided information, used humor, and occasionally asked follow-up questions. Three examples are shown in Figures 41–43.

Figure 41. Example of PAPD Agency Self-Initiated Tweet



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Figure 42. Example of MVPD Agency Self-Initiated Reply Tweet



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Figure 43. Example of PAPD Agency Self-Initiated Reply Tweet



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

This strategy has the potential to benefit the agency in a number of ways. First, it brings the user's attention to the agency's Twitter account, and in so doing may generate a new follower. Second, the novelty of having a police department respond may cause the user to retweet the agency's message to show their followers what the police said; this will spread the reach of the agency's account and may generate other new followers as well. Third, it shows the user that the agency is active on Twitter, engaged with their community, and willing to proactively reach out to individuals to start conversations. This practice can even benefit the user to whom the police replied, in that their Twitter

handle now appears in the timeline of a police agency with thousands of followers. Since the timeline is publicly viewable, other users could potentially view the user's Twitter handle in the police timeline and start following *them* as a result.

There are a few ways that police agencies might select tweets to which they want to respond. First, the agency could be following the Twitter accounts of people who live or work in their community and spot a tweet from that person on a topic of mutual concern. Second, the agency could choose to monitor particular hashtags common to their jurisdiction (for example, #PaloAlto or #MountainView) and selectively respond to any tweet they see on a topic of mutual concern. Third, the agency could choose to monitor a set of relevant words (for example, "palo alto police" or "love palo alto"); if they see any tweet that includes those words, they can selectively respond as necessary.

Agencies looking to increase opportunities for two-way engagement should consider self-initiating reply tweets to Twitter users. Each reply sent is an opportunity for the agency to engage a user in conversation and potentially gain new followers in the process. The practice is an example of the "institutionalization of innovative social media practices" described by Mergel.²⁵³ It is also consistent with what Lee and McGovern discovered when the public affairs managers they interviewed saw social media as a way to improve their agencies' public image and improve trust, and increase the effectiveness of their law enforcement efforts.²⁵⁴

²⁵³ Mergel and Bretschneider, "A Three-Stage Adoption," 395.

²⁵⁴ Lee and McGovern, "Force to Sell," 120.

J. EXCEPTIONAL GROWTH PERIODS

Each of the three agencies examined experienced at least one period of exceptional follower growth during the study, as shown in Table 56.

Table 56. Exceptional Growth Periods during Study

Agency	Date (UTC) ²⁵⁵	Incident	New Followers
MVPD	August 14–16	Live-tweeted manhunt	1,080
SCPD	August 7	Arrest of NFL player	140
SCPD	August 27	Live-tweeted major fire	122
PAPD	August 7	Live-tweeted bomb squad call	96

SCPD, MVPD, and PAPD Twitter account analytics accessed October 21, 2015. See <https://twitter.com/SantaClaraPD>; <https://twitter.com/MountainViewPD>; <https://twitter.com/PaloAltoPolice>.

The remarkable growth experienced by the MVPD over a three-day period surrounded a live-tweeted event in which a felony assault suspect was loose in a neighborhood.²⁵⁶ The MVPD broadcast live updates to the search as a police helicopter assisted overhead. The MVPD sent four original tweets and 22 reply tweets during the course of the incident. An examination of the tweets they sent does not reveal any that were retweeted more than 22 times. An Internet search was performed to see if anything overtly obvious could have contributed to that spike in followers (which continued even after the manhunt ended), but nothing could be located. The true reason for the MVPD's remarkable exceptional growth over that three-day period remains unknown. Figures 44 and 45 show tweets sent during this time.

²⁵⁵ It bears remembering here that the archive provided by Twitter (and the daily follower numbers) generally is time-stamped in Coordinated Universal Time (UTC) and not local time. Thus, a 24-hour period as defined by Twitter in UTC does not correspond to the same 24-hour cycle in local time.

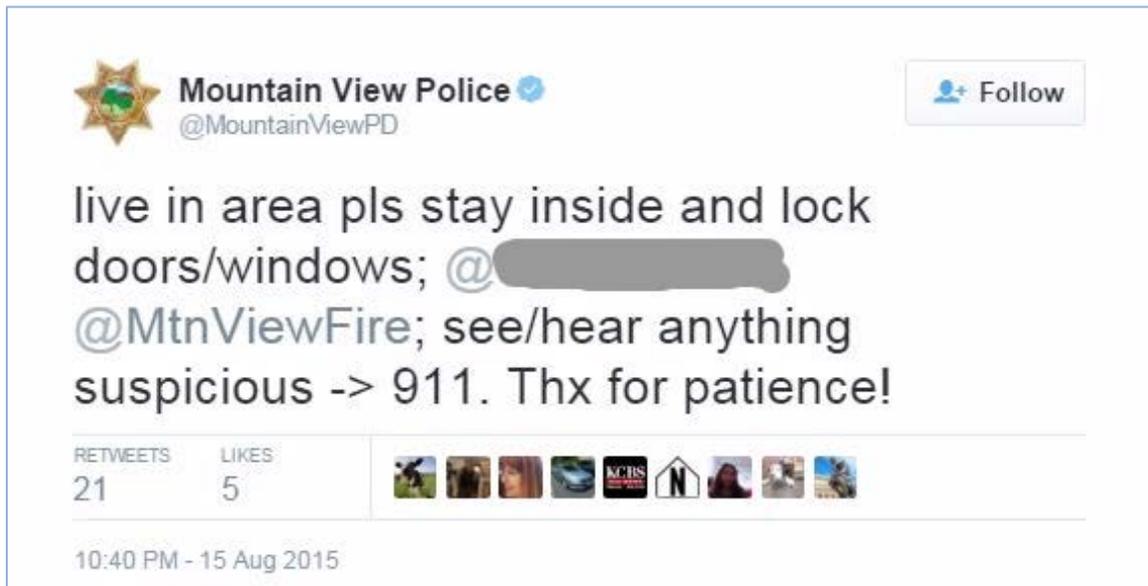
²⁵⁶ For a media account of this incident, see <http://www.mv-voice.com/news/2015/08/17/assault-victim-found-during-police-search>.

Figure 44. Example of MVPD Tweet during Exceptional Growth Period—
Part 1



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

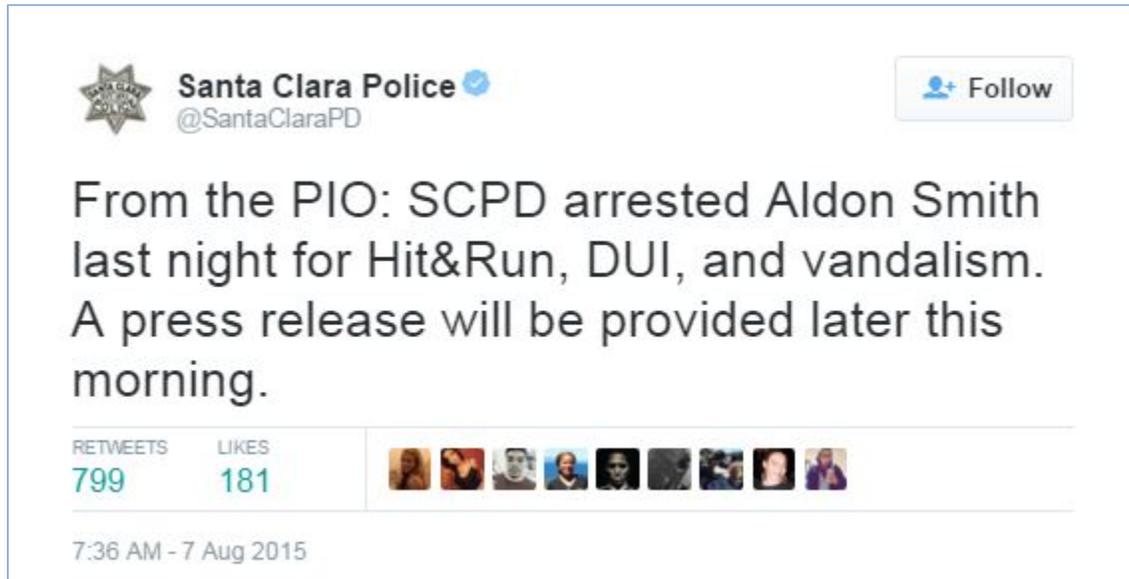
Figure 45. Example of MVPD Tweet during Exceptional Growth Period—
Part 2



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

The SCPD enjoyed their first period of exceptional growth when they sent a tweet announcing the arrest of an NFL player.²⁵⁷ This tweet, which is shown in Figure 46, was retweeted nearly 800 times, generated a remarkable 67 reply tweets from 63 unique Twitter users, and was responsible for 140 new followers to the SCPD account.

Figure 46. Example of SCPD Tweet during First Exceptional Growth Period



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD/status/629662339743088640>.

²⁵⁷ For a media account of this incident, see http://www.mercurynews.com/crime-courts/ci_28601169/49ers-star-aldon-smith-arrested-again.

The SCPD's second period of exceptional growth came when they live-tweeted a major fire at a shopping center caused by a vehicle collision with a gas line (after which the vehicle fled the scene).²⁵⁸ The SCPD sent ten tweets during the course of the event, including one with photos of firefighters battling the blaze. The SCPD received 122 new followers as a result of this incident. One of the tweets sent during this period is shown in Figure 47.

Figure 47. Example of SCPD Tweet during Second Exceptional Growth Period



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD/status/636701691895615488>.

²⁵⁸ For a media account of this incident, see http://www.mercurynews.com/crime-courts/ci_28708900/santa-clara-fire-initially-reported-two-loud-explosions.

The PAPD's sole period of exceptional growth came in response to them live-tweeting an incident involving a bomb squad response to detonate several old live grenades that a homeowner had discovered in their garage.²⁵⁹ The PAPD sent 21 original tweets (one of which is shown in Figure 48) and 13 reply tweets during the incident, and received 96 new followers as a result.

Figure 48. Example of PAPD Tweet during Exceptional Growth Period



Source: "Palo Alto Police Twitter," accessed October 21, <https://twitter.com/PaloAltoPolice/status/629439145979449344>.

These periods of exceptional follower growth are precipitated by events of public interest. It could be a notable arrest, a major call, a critical incident, or some other event that captures the public's attention. Many of the tweets sent during an incident are retweeted by users right away, amplifying the reach of the agency's message and exposing the agency to a new set of users who may then become followers. The agency

²⁵⁹ For a media account of this incident, see <http://www.paloaltoonline.com/news/2015/08/06/police-expect-a-loud-boom-in-the-next-hour>.

becomes the news source during these events, and people begin following to find out the latest accurate information.

Agencies looking to increase follower numbers should consider live-tweeting incidents that they either *know* are going to attract public attention, or that *could* attract attention if they focused on something newsworthy. This gives the agency a chance to enter a period of exceptional growth, with users turning to the agency to garner reliable information as the event transpires.

K. CONCLUSION

Analyzing the data from the three case studies cannot conclusively demonstrate a relationship between the amount of two-way engagement and the number of followers, on either a monthly or daily basis. However, the two agencies that engage in a two-way communication model received more new followers over the study period, though there are myriad other variables that could also explain that growth in followership that are outside the scope of this study.

The analysis revealed a number of conclusions about two-way engagement. It shows that agency tweets about community policing, real-time news, and static news generate the most user engagement. The data suggests that a tweet containing a visual element is largely irrelevant when it comes to engagement, and rather that the substance of the tweet's textual content is what promotes user replies. The data shows that many users sent self-initiated tweets to the police in an effort to get information or report a problem. The analysis also revealed three different ways that agencies can choose to reply to a tweet, some of which are more visible than others and may promote even more two-way engagement. If an agency self-initiates tweets to other users, they can initiate online conversations themselves. The data also showed that the highest number of new followers came during exceptional growth periods during which the agencies live-tweeted about major newsworthy events. The data suggests a number of tactics agencies can use to increase their amount of two-way engagement on Twitter. These tactics are presented in Chapter VII.

VII. RECOMMENDATIONS AND CONCLUSION

Law enforcement use of social media is a hot topic among today's police chiefs and sheriffs. With the amount of public attention focused on police agencies in contemporary society, the way those agencies choose to communicate and interact with their communities is critically important. This issue is receiving substantial national attention due to the U.S. Department of Justice's after-action assessment of the police response to the Ferguson demonstrations, and their *Final Report of the President's Task Force on 21st Century Policing*. The Ferguson report recommended that police agencies designate dedicated personnel to staffing a social media presence, stating "the goal is to establish a social media platform that builds trust with the community and encourages two-way communication between the police and the communities they serve."²⁶⁰

Deciding to have a social media presence alone is not enough. Agencies need to determine *how* they want to engage. Are they going to become the equivalent of a digital bullhorn, pushing information at the public in a one-way manner only? Or are they going to dedicate the time and energy to being responsive on social media, and engaging in regular two-way, back-and-forth communication? As Mergel asks, "Do they simply want to inform citizens, or do they want to consult, include, collaborate with, or even empower citizens?"²⁶¹ This decision must be employed now, in advance of a crisis situation.

In Mergel and Bretschneider's three-stage social media adoption process for government, the third and final stage occurs when top management "recognizes the need for additional resources in the form of manpower, organizational structures, and rethinking of existing engagement tactics and interactions."²⁶² As social media manager positions become commonplace throughout the law enforcement profession, the impact that one agency's two-way engagement work may have on a neighboring agency that subscribes to a one-way communication model may be staggering. Indeed, as Sheil, Violanti, and Slusarski observed, "One city cannot afford to remain silent when others

²⁶⁰ United States Department of Justice, *After-Action Assessment*, 103.

²⁶¹ Mergel, *Social Media in the Public Sector*, 178.

²⁶² Mergel and Bretschneider, "A Three-Stage Adoption," 397.

are openly sharing.”²⁶³ If a resident in one city can tweet to their police and get an immediate, informative response, how does it look for a neighboring agency that chooses to ignore questions from its residents? As police executives consider these topics, take into account the U.S. Department of Justice’s recommendations, and begin staffing social media manager positions, a tide of two-way engagement may start sweeping through police agencies across the United States, if due only to peer pressure and comparison.

While research is robust on topics such as two-way engagement, the benefits of followership, and the positive impact a government agency can have by using social media in the aftermath of a crisis, there is a marked lack of police-specific quantifiable data. Police executives looking to create a social media manager position cannot rely solely on the anecdotal, vague recommendations of a self-appointed “expert” that there is a benefit to spending time and resources engaging with the public in a two-way manner. This thesis attempted to fill that gap by examining police-specific data in an effort to provide police executives with knowledge to inform staffing decisions.

Using the three case studies presented here, the analysis showed that the two agencies using a two-way communication model received more followers overall than the agency using a one-way model. Admittedly, there are myriad other variables that could explain the difference in follower numbers. The analysis did not conclusively find a relationship on a monthly or daily basis between the amount of the two-way engagement and the number of followers. The analysis did reveal a number of tactics that police agencies can employ to increase their two-way engagement. Those tactics are detailed in Section A, which is tailored specifically to the social media managers who would be composing the tweets.

Although there was not a high correlation on a daily or monthly basis, agencies using a two-way engagement model gained more new followers than an agency using a one-way engagement model. This finding is important, as having a large number of followers in advance of a crisis is of critical importance to a law enforcement agency. The more followers an agency has, the more people can receive the agency’s message, in

²⁶³ Sheil, Violanti, and Slusarski, “Explaining Attitudes,” 66.

its own words, and without the filter or “spin” of a third party intermediary such as mainstream media outlets. Followers can receive accurate, critical public safety information directly from the agency in as timely a way as possible. If two-way engagement can contribute even in a small way to building an agency’s follower base, then it may be worth the cost of staffing.

A. RECOMMENDATIONS FOR SOCIAL MEDIA MANAGERS

The data from this research forms a number of recommendations for agencies looking to increase opportunities for two-way engagement.

(1) Recommendation #1: Agencies should tweet about community policing topics, static news, and real-time news.

These categories of tweets received the highest numbers of user replies. While users replied to tweets in other categories, they most frequently replied to tweets in one of these three categories. Each reply received is an opportunity for the police agency to engage the user in further conversation.

(2) Recommendation #2: Agencies should pay particular attention to the textual subject matter of a tweet.

If a tweet contains information that the public finds interesting, users will be more inclined to retweet it. If a tweet “goes viral” and gains exceptional reach, it is more likely to receive responses from users. The data from this study cannot definitely conclude that tweets that include a visual element like a picture or a video were more likely or less likely than text-only tweets to generate two-way engagement and user replies. It may still be beneficial to include a visual element in tweets, as they may very well cause the tweet to enjoy a higher reach (e.g., more retweets), though that was outside the scope of this study.

(3) Recommendation #3: Agencies should take advantage of opportunities for exceptional follower growth.

If building a larger follower base is an agency’s goal, they should take advantage of opportunities to tweet about major incidents in a timely way. Whether it be a notable

arrest, a major call, a critical incident, or some other event that would capture the public's attention, many of the tweets sent during such an incident are retweeted by users right away, amplifying the reach of the agency's message and exposing the agency to a new set of users who may then become followers. The biggest leaps in follower numbers observed during the study period tended to occur as the result of the agency tweeting about a major incident as it happened.

(4) Recommendation #4: Agencies should consider the three different reply methods whenever sending a reply tweet to maximize the message's two-way engagement benefit.

The MVPD's unique approach to sending reply tweets (by choosing between a *direct reply*, a *period reply*, or a *creative reply*, depending on the situation and the potential benefit to the larger community) is something any agency adopting a two-way engagement model should consider. By altering the way they choose to reply, they are essentially putting their two-way responsiveness on display for all of their followers to see. This method may very well generate even more two-way engagement, since followers who are able to regularly see them responding to inquiries from other users may be more inclined to ask a question of the agency or provide information.

(5) Recommendation #5: Agencies should respond to self-initiated user inquiries whenever possible.

A user self-initiates sending a tweet to the police department to ask a question, report a crime, communicate concerns, and so forth. It is the equivalent of a citizen approaching a police officer on the street and making an inquiry in person. Each tweet is an opportunity for the police agency to respond, provide answers and information, and also demonstrate their responsiveness, accessibility, and willingness to engage. The two agencies that regularly responded to user self-initiated tweets (the MVPD responded to 122 such tweets, and the PAPD responded to 235) received more new followers during the course of the study period.

(6) Recommendation #6: Agencies should take the opportunity to have ongoing, back-and-forth conversations with users whenever possible.

Agencies should not hesitate to take the time necessary (and the number of reply tweets necessary) to attempt to resolve a user's problem or properly address an inquiry. Much like in-person conversations, conversations on Twitter can be back-and-forth and complex. An agency response does not have to be contained in a single tweet. The two agencies that had ongoing, multi-tweet conversations with users received more new followers during the course of the study period.

(7) Recommendation #7: Agencies should self-initiate reply tweets to other Twitter users in appropriate situations.

Agencies should keep an eye out for tweets from users to which they can legitimately respond spontaneously, and attempt to engage the user in conversation. Each reply sent by the agency is an opportunity for the agency to strike up an online conversation, and potentially gain new followers in the process. The two agencies that did this during the study period (the MVPD did so 22 times, and PAPD 53) received more new followers. There is no reason why an agency should have to wait for a user to self-initiate a conversation; the agency can simply initiate the two-way conversation itself.

B. SUGGESTIONS FOR FUTURE RESEARCH

This thesis identified a number of areas for future study in the field of law enforcement social media use.

(1) Enhance the current study by increasing the sample size.

The data examined in this thesis had a small sample size of three local police departments in a single geographic area, and was limited to six months of data. Future studies could expand to include additional police agencies and a larger period of time. It is possible that definitive conclusions about the relationship between two-way communication and followership could be drawn with a larger sample size. Such a study could also further develop and refine the coding scheme initiated here, perhaps

introducing additional coders for the sake of reliability. The present study was limited by a small sample size and the fact that there was only a single coder; at the least, that coder was internally consistent throughout the study but biases could have unintentionally affected the analysis.

(2) Expand the study to include other data elements captured by Twitter.

Twitter has a wealth of other data fields that were not examined as part of this study, due to limitations in time and resources. For example, research could expand to include these other data fields in an effort to see which of them may have had an impact on two-way engagement and followership. Each tweet includes analytics on the number of times it was seen by others on Twitter, the total number of times people interacted with the tweet (including such data as how many times they clicked on a URL, or clicked on a picture or video), the number of times it was retweeted, and the number of times it received a “like” from a user. The research could examine the impact of retweets on followership, which could then spur follow-up questions about smart practices agencies could adopt to encourage users to retweet their content.

(3) Examine the impact of police Twitter use on public perception and trust.

Research into the impact of police Twitter use on public perception and trust in law enforcement could be conducted. Such a study could influence decisions by police executives about staffing a social media manager position, particularly if the research showed that the agency’s Twitter use could positively impact public perception and trust in the police. As Lee and McGovern wrote, not much is known about “how ‘virtual’ encounters impact on public satisfaction levels.”²⁶⁴ Such a study could include a sentiment analysis of tweets about the police.

²⁶⁴ Lee and McGovern, “Force to Sell,” 114.

(4) Employ a case study approach on different ways to staff a police social media team.

As police agencies dedicate resources to their social media programs, departments will be searching for different staffing models. A case study method of different options could provide guidance to police agencies looking to expand their online presence. Such research could also include the potential costs and benefits of using “disaster digital volunteers,” a technique used by the American Red Cross for major disasters.²⁶⁵ This thesis did not address staffing concerns, but it is an important issue for police agencies everywhere.

(5) Study the unintended consequences of successful two-way engagement.

As identified in Section E of Chapter VI, agencies that are continually responsive to Twitter users may create a public expectation that they are always monitoring their accounts and can receive emergency alerts via tweets. Indeed, as Mergel writes, “Responsiveness and impact in a real-time information-sharing environment might be challenging, but as soon as you start, citizens will expect this form of responsiveness cycle for future interactions with your agency.”²⁶⁶ Research into this area could include a policy analysis on how agencies choose to handle emergency reports via Twitter, and an examination of staffing alternatives to provide around-the-clock monitoring of agency accounts for tweets of an emergency nature.

C. CONCLUSION

This thesis examined the two-way Twitter engagement practices of three local law enforcement agencies in California’s Silicon Valley region. The research showed that the two agencies using a two-way communication model received more followers during the study period than the agency using a one-way communication model, though it did not conclusively demonstrate a relationship on a monthly or daily basis between the amount

²⁶⁵ John Weaver, Valerie Cole, and Gloria Huang, “Tech Topics: Red Cross Digital Disaster Volunteers (DDVs) Offer Support through Social Media,” *New Social Worker* 19, no. 4 (October 2012), 30.

²⁶⁶ Mergel, *Social Media in the Public Sector*, 142.

of two-way engagement and the number of followers. The research also identified a number of tactics that the agencies used to increase two-way engagement, and provided a list of recommendations on how those tactics could be implemented by agencies desiring more two-way communication with their communities.

APPENDIX A. DEFINITIONS

For purposes of this study, the following definitions of terms are used (please note that this list uses a strategic rather than alphabetical order).

One-way communication: a social media communication strategy in which a user predominantly sends information out *to* their followers, but does not receive information *from* other users or respond to inquiries. This is presented as the opposite of two-way communication. See also “digital bullhorn.”

Two-way communication/two-way engagement: a social media communication strategy in which a user both sends information out to their followers, and receives information from other users and responds to inquiries. This is the presented as the opposite of one-way communication.

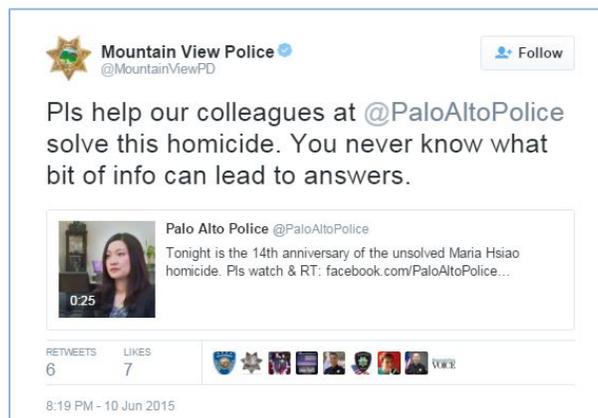
Follower: A user who subscribes to another user’s Twitter account, such that they can view all original tweets sent by that account.

Original tweet: A tweet sent to all followers of a Twitter account. See also its opposite, a “reply tweet.”

Retweet: A tweet composed by user *A* that user *B* forwards to all of his or her *own* followers without adding additional commentary. See also “quote tweet.”

Quote tweet: A tweet composed by user *A* that user *B* forwards to all of his or her *own* followers with additional commentary added. See Figure 49.

Figure 49. Tweet Definition: Quote Tweet



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD/status/608836025192845312>.

Reply tweet: A tweet directed at another account; an indicator of two-way communication. Reply tweets are publicly viewable, such that any user can see them on the sending account’s timeline. There are three methods to send a reply tweet as described in definitions for “direct reply,” “period reply,” and “creative reply”; the latter two methods cause the reply to be sent to all of the sending account’s followers.

Direct reply: This method of reply is only sent to the timelines of users who are followers of both parties to the conversation. It is characterized by the tweet beginning with the @ Twitter handle of the recipient. See Figure 50.

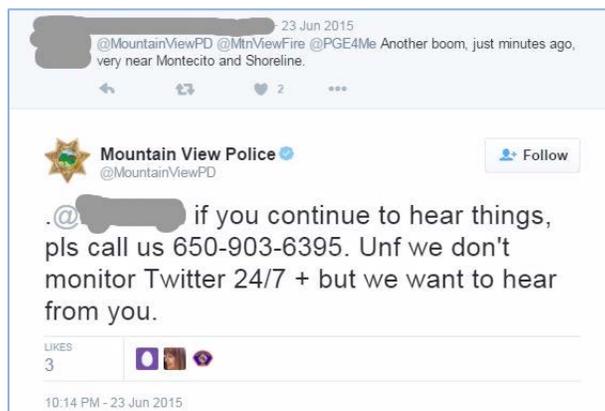
Figure 50. Tweet Definition: Direct Reply



Source: “Palo Alto Police Twitter,” accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Period reply: By inserting any character before the “@” sign of the recipient’s Twitter handle at the beginning of a direct reply (a period is the convention widely used by Twitter users), the reply is sent to the timelines of *all* users who follow the sending account. See Figure 51.

Figure 51. Tweet Definition: Period Reply



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Creative reply: When one user replies to another’s tweet, but chooses to include the original user’s Twitter handle in the middle or end of the reply tweet, such that it appears to look like an original tweet. See Figure 52.

Figure 52. Tweet Definition: Creative Reply



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Self-initiated tweet: A tweet sent by any user that is directed to another, but that was sent unsolicited. The intent of sending such a tweet is to initiate two-way engagement with another user.

Ongoing conversation: A conversation involving multiple back-and-forth reply tweets between users. See Figure 53.

Figure 53. Tweet Definition: Ongoing Conversation



Source: “Palo Alto Police Twitter,” accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Exceptional growth period: A period of time (measured in single-day increments) when an agency receives far more new followers than the average daily growth rate over the study period. These typically occur when major incidents happen, and often when agencies are live-tweeting those incidents.

Live-tweeting: When an agency sends real-time updates via Twitter about an ongoing incident.

Hashtag: A text phrase beginning with a pound sign (#). It becomes a clickable link that displays all tweets sent, by any user, that include that hashtag.

Direct message: A message sent privately between Twitter users. Direct messages are not publicly viewable on the user timelines, and are not a component of this study.

Digital bullhorn: A term coined by this author as a synonym for “one-way communication.”

APPENDIX B. CODING STRUCTURES

During the six-month time period studied for this thesis, the researcher examined all 1,648 tweets sent by three police departments. After excluding retweets (as they contain content written by other users, not the police departments), the researcher was left with 692 original tweets and 834 reply tweets that required categorization. The researcher also examined 363 self-initiated tweets sent by users to the police departments (and to which the agencies replied) to determine the general subject matter of the users' tweets. The researcher used a descriptive coding method to sort the tweets into the categories listed in this appendix.

If a tweet contained elements of more than one category, the researcher selected the most appropriate category based on the tweet's content. Examples of tweets in each category are provided here.

A. CODING FOR AGENCY ORIGINAL TWEETS

The 692 original tweets sent by the three agencies were coded into one of the following eight categories.

Real-time news: A tweet about something happening in real-time, like a breaking news incident or a current traffic advisory. All tweets sent during live-tweeted incidents were coded into this category. See Figure 54.

Figure 54. Tweet Example: Real-time News



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice/status/612703527496908800>.

Static news: A tweet containing news or information, but not pertaining to real-time events. This category includes news releases, police blotter entries, and advisories about future events. See Figure 55.

Figure 55. Tweet Example: Static News



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice/status/612703527496908800>.

Solicitation for community assistance: A tweet in which the police agency asks for the community’s help in some endeavor, often to locate a wanted criminal. See Figure 56.

Figure 56. Tweet Example: Solicitation for Community Assistance



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD/status/606248126823956481>.

Community policing: A tweet showing the police working in partnership with the community. See Figure 57.

Figure 57. Tweet Example: Community Policing



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD/status/598531779402731520>.

Humor: A tweet containing a joke or that is otherwise designed to make followers laugh.
See Figure 58.

Figure 58. Tweet Example: Humor



Source: "Palo Alto Police Twitter," accessed October 21, 2015,
<https://twitter.com/PaloAltoPolice/status/606843580133568515>.

Crime prevention/safety message: A tweet containing crime prevention tips, information, or a safety message. See Figure 59.

Figure 59. Tweet Example: Crime Prevention/Safety Message



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD/status/638728185358630912>.

Self-promotion of other agency communications channel: A tweet encouraging followers to subscribe to another one of the agency’s communications channels (other than Twitter). See Figure 60.

Figure 60. Tweet Example:
Self-promotion of Other Agency Communications Channel



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice/status/631309219891810304>.

Other: Any tweet that does not fit into one of the other categories. Includes tweets about hiring announcements, pet adoptions, and so forth. See Figure 61.

Figure 61. Tweet Example: Other



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD/status/642469052733067265>.

B. CODING FOR AGENCY REPLY TWEETS

The 834 reply tweets sent by the three agencies were coded into one of the following seven categories.

General acknowledgement or thank-you: A tweet that simply acknowledges a user’s message, says “thank you,” or the functional equivalent. See Figure 62.

Figure 62. Tweet Example: General Acknowledgment or Thank You



Source: “Palo Alto Police Twitter,” accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Direction to call/email: A tweet that directs the user to place a phone call or to send an email for follow-up. See Figure 63.

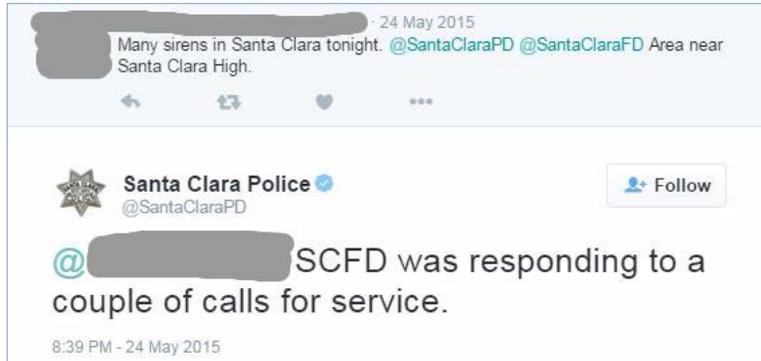
Figure 63. Tweet Example: Direction to Call/email



Source: “Mountain View Police Twitter,” accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Provide information: A tweet in which the agency answers a user’s question or otherwise provides information. See Figure 64.

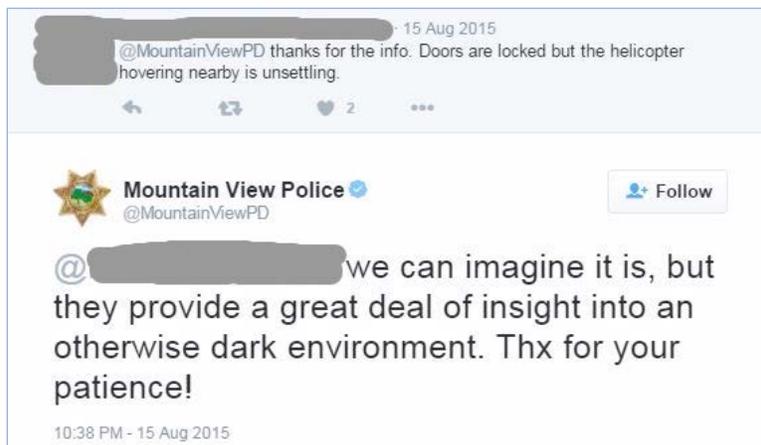
Figure 64. Tweet Example: Provide Information



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD>.

Conversational: A tweet acknowledging or thanking a user, but one that is more than a mere "thank you." These tweets are written casually or informally. See Figure 65.

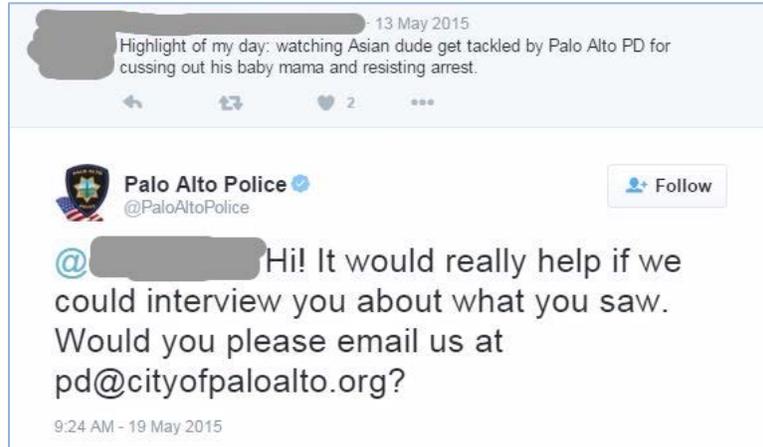
Figure 65. Tweet Example: Conversational



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Ask question: A tweet asking a question of a user, often to request clarifying information. See Figure 66.

Figure 66. Tweet Example: Ask Question



Source: "Palo Alto Police Twitter," October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Humor: A tweet containing a joke or otherwise designed to make a user laugh. See Figure 67.

Figure 67. Tweet Example: Humor



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Support for another agency: A tweet to another police agency showing camaraderie or support. See Figure 68.

Figure 68. Tweet Example: Support of Another Agency



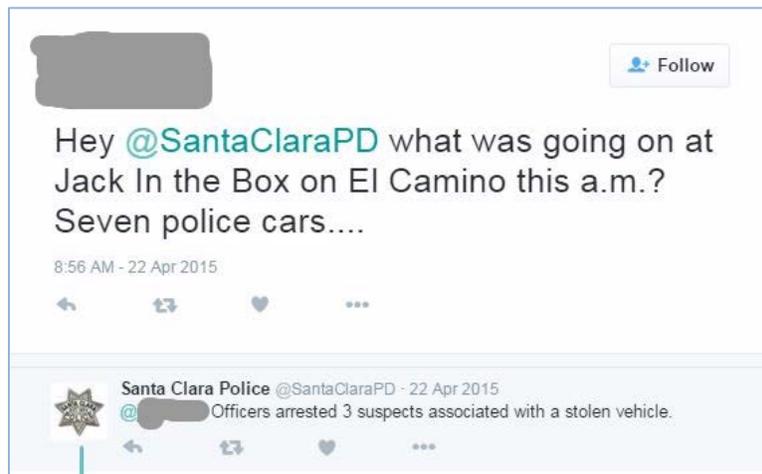
Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD/status/611684626684231680>.

C. CODING FOR USER SELF-INITIATED TWEETS

The 363 self-initiated tweets sent by users to the police departments (and to which the agencies replied) were coded into one of the following nine categories.

Inquiry: A tweet asking the police agency a question, often about events transpiring at a particular location. See Figure 69.

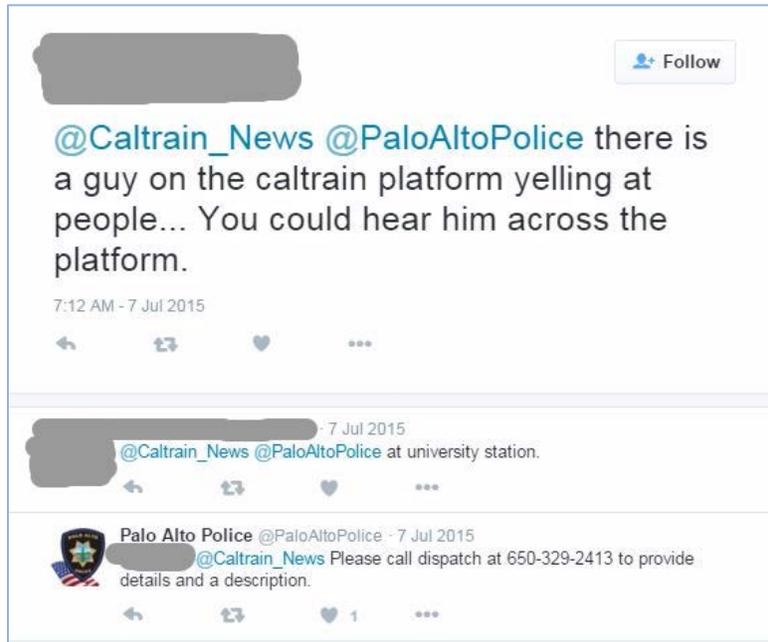
Figure 69. Tweet Example: Inquiry



Source: "Santa Clara Police Twitter," accessed October 21, 2015, <https://twitter.com/SantaClaraPD>.

Crime/traffic complaint: A tweet sent to the police with a complaint about crime or a traffic problem. See Figure 70.

Figure 70. Tweet Example: Crime/Traffic Complaint



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Community policing: A tweet sent to the police that involves the community working in partnership with the police. See Figure 71.

Figure 71. Tweet Example: Community Policing



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Thanking the police: A tweet sent to the police thanking them for their service. See Figure 72.

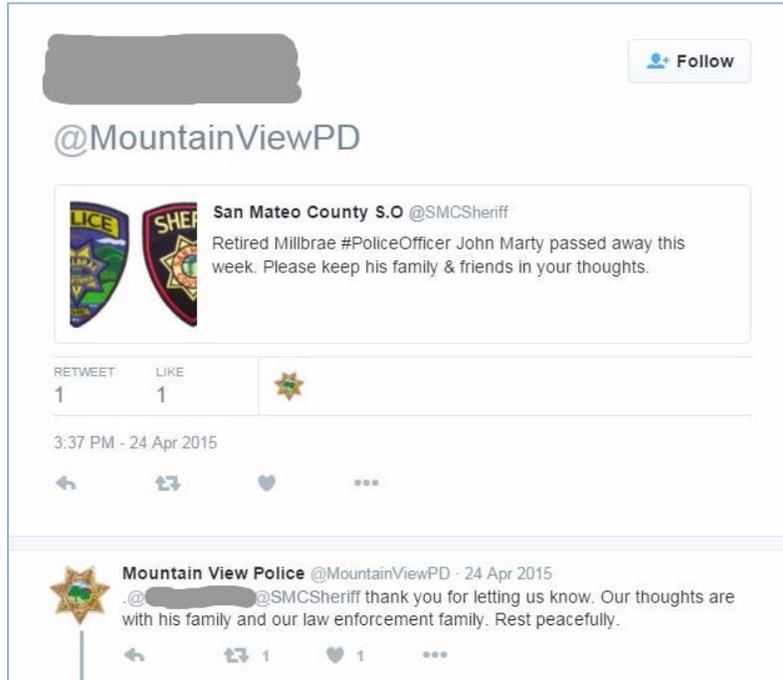
Figure 72. Tweet Example: Thanking the Police



Source: "Mountain View Police Twitter," October 21, 2015, <https://twitter.com/MountainViewPD>.

Condolences: A tweet sent to the police expressing condolences about the loss of an officer. See Figure 73.

Figure 73. Tweet Example: Condolences



Source: "Mountain View Police Twitter," accessed October 21, 2015, <https://twitter.com/MountainViewPD>.

Media inquiry: A tweet asking a question of the police agency, sent by a reporter or a media outlet. See Figure 74.

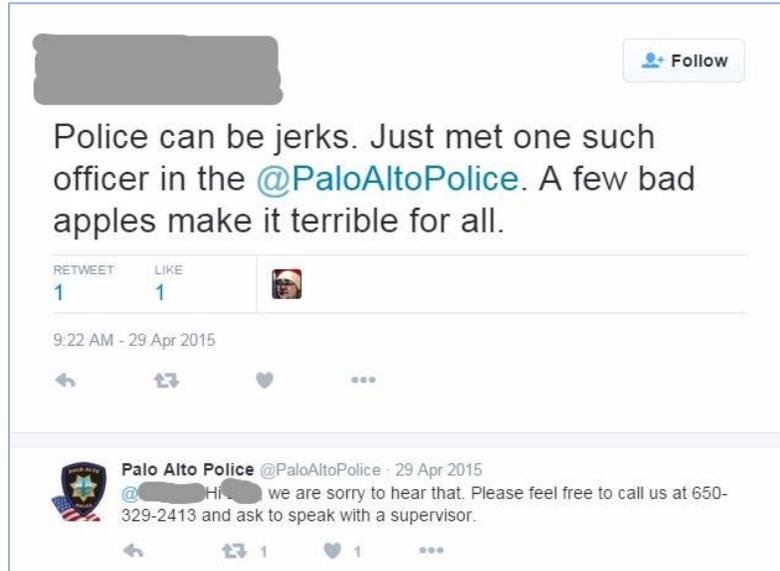
Figure 74. Tweet Example: Media Inquiry



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice/status/617064008831492096>.

Personnel complaint: A tweet sent to the police complaining about the conduct of a police employee. See Figure 75.

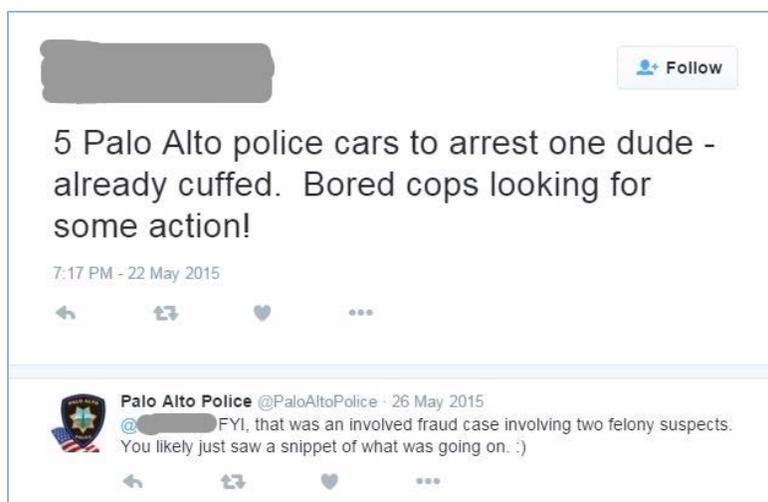
Figure 75. Tweet Example: Personnel Complaint



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Untrue allegation: A tweet sent to the police containing information that the police know to be false. See Figure 76.

Figure 76. Tweet Example: Untrue Allegation



Source: "Palo Alto Police Twitter," accessed October 21, 2015, <https://twitter.com/PaloAltoPolice>.

Unknown: A tweet sent to the police and to which the police responded, but due to the user's privacy settings on Twitter, the tweet is not publicly viewable; the subject matter of the user's tweet could not be determined by the police reply. No examples can be provided, since these tweets are not publicly viewable.

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LIST OF REFERENCES

- Acar, Adam and Yuya Muraki. "Twitter for Crisis Communication: Lessons Learned from Japan's Tsunami Disaster." *International Journal of Web Based Communities* 7, no. 3 (2011): 392–402. doi: [10.1504/IJWBC.2011.041206](https://doi.org/10.1504/IJWBC.2011.041206).
- Alexander, David E. "Social Media in Disaster Risk Reduction and Crisis Management." *Science and Engineering Ethics* 20, no. 3 (2014): 717–33. doi: [10.1007/s11948-013-9502-z](https://doi.org/10.1007/s11948-013-9502-z).
- American Red Cross. "Web Users Increasingly Rely on Social Media to Seek Help in a Disaster." Last modified August 9, 2010. <http://newsroom.redcross.org/2010/08/09/press-release-web-users-increasingly-rely-on-social-media-to-seek-help-in-a-disaster/>.
- Bar-Tur, Yael. "Boston Police Schooled Us All on Social Media." *Mashable*. Last modified April 22, 2013, <http://mashable.com/2013/04/22/boston-police-social-media/>.
- Bird, Deanne, Megan Ling, and Katharine Haynes. "Flooding Facebook: The Use of Social Media During the Queensland and Victorian Floods." *Australian Journal of Emergency Management* 27, no. 1 (2012): 27–33.
- Chainey, Spencer, and Lisa Tompson. "Engagement, Empowerment and Transparency: Publishing Crime Statistics Using Online Crime Mapping." *Policing* 6, no 3 (2012): 228–239. doi: [10.1093/police/pas006](https://doi.org/10.1093/police/pas006).
- Chatfield, Akemi Takeoka, Hans J. Scholl, and Uuf Brajawidagda. "Tsunami Early Warnings via Twitter in Government: Net-Savvy Citizens' Co-Production of Time-Critical Public Information Services." *Government Information Quarterly* 30, no. 4 (October 2013): 377–386. doi: [10.1016/j.giq.2013.05.021](https://doi.org/10.1016/j.giq.2013.05.021).
- Cho, Seong Eun, Kyujin Jung, and Han Woo Park. "Social Media Use During Japan's 2011 Earthquake: How Twitter Transforms the Locus of Crisis Communication." *Media International Australia Incorporating Culture and Policy* 149 (November 2013): 31–40.
- City of Mountain View. "Fiscal Year 2015–16 Adopted Budget." Accessed December 31, 2015. <http://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=17481>.
- City of Palo Alto. "Adopted Operating Budget." Accessed January 1, 2016. <http://www.cityofpaloalto.org/civicax/filebank/documents/43341>.

- Coombs, W. Timothy, and Sherry Jean Holladay. "How Publics React to Crisis Communication Efforts: Comparing Crisis Response Reactions Across Sub-Arenas." *Journal of Communication Management* 18, no. 1 (2014): 40–57. doi: [10.1108/JCOM-03-2013-0015](https://doi.org/10.1108/JCOM-03-2013-0015).
- Copitch, Gary, and Chris Fox. "Using Social Media as a Means of Improving Public Confidence." *Safer Communities* 9, no. 2 (2010): 42–48. doi: [10.5042/sc.2010.0226](https://doi.org/10.5042/sc.2010.0226).
- Crowe, Adam. "The Social Media Manifesto: A Comprehensive Review of the Impact of Social Media on Emergency Management." *Journal of Business Continuity & Emergency Planning* 5, no. 1 (2011): 409–420.
- Crump, Jeremy. "What Are the Police Doing on Twitter? Social Media, the Police and the Public." *Policy & Internet* 3 (2011): 1–27. doi: [10.2202/1944-2866.1130](https://doi.org/10.2202/1944-2866.1130).
- Davis, Edward F. III, Alejandro A. Alves and David Alan Sklansky. "Social Media and Police Leadership: Lessons from Boston." *New Perspectives in Policing* (March 2014): 1–20.
- Dawson, Douglas, Steven Hill, and Ryan Bank. "Use Social Media for Crises." *United States Naval Institute. Proceedings* 139, no. 10 (October 2013): 77–81.
- Duggan, Maeve. "Mobile Messaging and Social Media 2015." Pew Research Center. Last modified August 19, 2015. <http://www.pewinternet.org/2015/08/19/the-demographics-of-social-media-users/>.
- Edwards, Charlie, Calum Jeffray, and Raffaello Pantucci. *Out of Reach? The Role of Community Policing in Preventing Terrorism in Canada*. London: Royal United Services Institute, 2015.
- Federal Emergency Management Agency. *The Response to the 2011 Joplin, Missouri, Tornado Lessons Learned Study*. Washington, D.: FEMA, 2011.
- Flaherty, Steve. "Social Media from a Colonel's Perspective." IACP Center for Social Media. Last modified August 2011. <http://www.iacpsocialmedia.org/ChiefsCorner/ChiefsCornerArticle.aspx?cmsid=5412>.
- Helsloot, Ira, and Jelle Groenendaal. "Twitter: An Underutilized Potential during Sudden Crises." *Journal of Contingencies and Crisis Management* 21, no. 3 (September 2013): 178–183. doi: [10.1111/1468-5973.12023](https://doi.org/10.1111/1468-5973.12023).

- Houston, J. Brian, Joshua Hawthorne, Mildred F. Perreault, Eun Have Park, Marlo Goldstein Hode, Michael R. Halliwell, Sarah E. Turner McGowen, Rachel Davis, Shivani Vaid, Jonathan A. McElderry, and Stanford A. Griffith. "Social Media and Disasters: A Functional Framework for Social Media Use in Disaster Planning, Response, and Research." *Disasters* 39 (January, 2015): 1–22. doi: [10.1111/disa.12092](https://doi.org/10.1111/disa.12092).
- Hsiung, Chris. "Professionalization of the Social Media Manager Role." *The Social Media Beat*. Last modified April 4, 2014. blog.iacpsocialmedia.org/Home/tabid/142/entryid/358/Default.aspx.
- . "Social Media Notifications and Engagement: Two Sides of the Same Coin." *Social Media Beat*. Last modified October 17, 2015. blog.iacpsocialmedia.org/Home/tabid/142/entryid/438/Default.aspx.
- Hughes, Amanda L. and Leysia Palen. "The Evolving Role of the Public Information Officer: An Examination of Social Media in Emergency Management." *Journal of Homeland Security and Emergency Management* 9, no. 1 (January 2012): 1–20. doi: [10.1515/1547-7355.1976](https://doi.org/10.1515/1547-7355.1976).
- International Association of Chiefs of Police. "Law Enforcement Executives' Social Media Top Ten." IACP Center for Social Media, December 2012. www.iacpsocialmedia.org/Portals/1/documents/Fact%20Sheets/Chiefs%20Top%20Ten%20Fact%20Sheet.pdf.
- . *Making Social Media Part of the Uniform*. Accenture, 2014. http://www.iacpsocialmedia.org/Portals/1/documents/external/LESMPoV2014_FINAL.pdf.
- . "2015 IACP Social Media Survey." IACP Center for Social Media. Accessed November 22, 2015. www.iacpsocialmedia.org/Portals/1/documents/FULL%202015%20Social%20Media%20Survey%20Results.pdf.
- International Association of Chiefs of Police Center for Social Media. "Directory." Accessed December 15, 2015. www.iacpsocialmedia.org/Directory.aspx.
- Janoske, Melissa L., Brooke Fisher Liu, and Stephanie Madden. "Congress Report: Experts' Recommendations on Enacting Best Practices in Risk and Crisis Communication." *Journal of Contingencies and Crisis Management* 21 (2013): 231–235. doi: [10.1111/1468-5973.12031](https://doi.org/10.1111/1468-5973.12031).
- Jung, Joo-Young, and Munehito Moro. "Multi-Level Functionality of Social Media in the Aftermath of the Great East Japan Earthquake." *Disasters* 38 (July 2014): S123–S143. doi: [10.1111/disa.12071](https://doi.org/10.1111/disa.12071).

- Kongthon, Alisa, Choochart Haruechaiyasak, Jaruwat Pailai, and Sarawoot Kongyoung. "The Role of Social Media during a Natural Disaster: A Case Study of the 2011 Thai Flood." *International Journal of Innovation and Technology Management* 11, no. 3 (June 2014): 14400121–144001212. doi: [10.1142/S0219877014400124](https://doi.org/10.1142/S0219877014400124).
- Lee, Murray and Alyce McGovern. "Force to Sell: Policing the Image and Manufacturing Public Confidence." *Policing & Society* 23, no. 2 (2013): 103–124. doi: [10.1080/10439463.2011.647913](https://doi.org/10.1080/10439463.2011.647913).
- Li, Jessica, Arun Vishwanath, and H. R. Rao. "Retweeting the Fukushima Nuclear Radiation Disaster." *Association for Computing Machinery: Communications of the ACM* 57, no. 1 (January 2014): 78–85. doi: [10.1145/2500881](https://doi.org/10.1145/2500881).
- Lieberman, Joel D., Deborah Koetzle, and Mari Sakiyama. "Police Departments' Use of Facebook: Patterns and Policy Issues." *Police Quarterly* 16, no. 4 (2013): 438–462. doi: [10.1177/1098611113495049](https://doi.org/10.1177/1098611113495049).
- Lindsay, Bruce R. *Social Media and Disasters: Current Uses, Future Options, and Policy Considerations* (CRS Report No. R41987). Washington, DC: Congressional Research Service, 2011.
- Lovejoy, Kristen and Gregory D. Saxton. "Information, Community, and Action: How Nonprofit Organizations Use Social Media." *Journal of Computer-Mediated Communication* 17 (2012): 337–353. doi: [10.1111/j.1083-6101.2012.01576.x](https://doi.org/10.1111/j.1083-6101.2012.01576.x).
- Magro, Michael J. "A Review of Social Media Use in E-Government." *Administrative Sciences* 2, no. 2 (2012): 148–161. doi: [10.3390/admsci2020148](https://doi.org/10.3390/admsci2020148).
- Mergel, Ines. *Social Media in the Public Sector: A Guide to Participation, Collaboration and Transparency in the Networked World*. Somerset, NJ: John Wiley & Sons, 2012.
- Mergel, Ines, and Stuart I. Bretschneider. "A Three-Stage Adoption Process for Social Media Use in Government." *Public Administration Review* 73 (2013): 390–400. doi: [10.1111/puar.12021](https://doi.org/10.1111/puar.12021).
- Nelson, Katie. "Cops Love Lemonade Stands: Palo Alto Police Launch Social Media Campaign." *San Jose Mercury News*. June 30, 2015. http://www.mercurynews.com/news/ci_28407964/cops-love-lemonade-stands:-palo-alto-police-launch-social-media-campaign.
- Obama, Barack. "Memorandum for the Heads of Executive Departments and Agencies: Transparency and Open Government. Last modified January 21, 2009. https://www.whitehouse.gov/sites/default/files/omb/assets/memoranda_fy2009/m09-12.pdf.

- Olsson, Eva-Karin. "Crisis Communications in Public Organisations: Dimensions of Crisis Communication Revisited." *Journal of Contingencies and Crisis Management* 22 (2014): 113–125. doi: [10.1111/1468-5973.12047](https://doi.org/10.1111/1468-5973.12047).
- Palen, Leysia. "Online Social Media in Crisis Events." *Educause Quarterly* 20, no. 3 (2008): 76–78.
- Palen, Leysia, Kate Starbird, Sarah Vieweg, and Amanda Hughes. "Twitter-Based Information Distribution during the 2009 Red River Valley Flood Threat." *Bulletin of the American Society for Information Science and Technology (Online)* 36, no. 5 (June 2010): 13–17. doi: [10.1002/bult.2010.1720360505](https://doi.org/10.1002/bult.2010.1720360505).
- Palttala, Pauliina, Camillo Boano, Ragnhild Lund, and Marita Vos. "Communication Gaps in Disaster Management: Perceptions by Experts from Governmental and Non-Governmental Organizations." *Journal of Contingencies and Crisis Management* 20 (2012): 2–12. doi: [10.1111/j.1468-5973.2011.00656.x](https://doi.org/10.1111/j.1468-5973.2011.00656.x).
- Perrin, Andrew. "Social Media Usage: 2005–2015." Pew Research Center. Last modified October 8, 2015. 2015. <http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/>.
- Peters, Lynda A. "Utilizing Social Media to Further the Nationwide Suspicious Activity Reporting Initiative." Master's thesis, Naval Postgraduate School, 2012.
- Police Executive Research Forum. *Lessons Learned from the 2015 Civil Unrest in Baltimore*. Washington, DC: PERF, 2015.
- Queensland Police Service. *Disaster Management and Social Media: A Case Study*. Brisbane, Australia: Queensland Police Service. Accessed November 17, 2015. <https://www.police.qld.gov.au/corporatedocs/reportsPublications/other/Documents/QPSSocialMediaCaseStudy.pdf>.
- Rahm, Dianne and Christopher G. Reddick. "Information and Communication Technology (ICT) for Emergency Services: A Survey of Texas Emergency Services Districts." *International Journal of E-Politics* 4, no. 3(2013): 30–43. doi: [10.4018/jep.2013070103](https://doi.org/10.4018/jep.2013070103).
- Ruddell, Rick, and Nicholas Jones. "Social Media and Policing: Matching the Message to the Audience." *Safer Communities* 12(2) (2013): 64–70. doi: [10.1108/17578041311315030](https://doi.org/10.1108/17578041311315030).
- Santa Clara Police Department. "Santa Clara Police Department: About Us." Accessed December 27, 2015. <http://santaclaraca.gov/government/departments/police-department/about-us>.

- Scholten, Astrid, Jan Jorritsma, and Ira Helsloot. "On the Need for a Paradigm Shift in the Dutch Command and Information System for the Acute Phase of Disasters." *Journal of Contingencies and Crisis Management*, 22 (2014): 39–51, doi: [10.1111/1468-5973.12035](https://doi.org/10.1111/1468-5973.12035).
- Sheil, Astrid, Michelle T. Violanti, and Kevin Slusarski. "Explaining Attitudes toward and Experiences with Social Media among Public Information Officers through Adaptive Structuration Theory." *Communications of the IIMA* 11, no. 4 (2011): 51–72.
- Shults, Joel F. "Social Breakdown: How Outdated Police Media Strategy Lost the Twitter-verse in Ferguson." *NIOA News* 11, no. 5, (2014): 1.
- Simon, Tomer, Avishay Goldberg, Limor Aharonson-Daniel, Dmitry Leykin, and Bruria Adini. "Twitter in the Cross Fire: The Use of Social Media in the Westgate Mall Terror Attack in Kenya." *PLoS One* 9, no. 8 (August 2014): 1–11. doi: [10.1371/journal.pone.0104136](https://doi.org/10.1371/journal.pone.0104136).
- Spicer, Tamara L. "Being Social: Integrating Social Media into Public Information Support to Emergence Response #smem." Master's thesis, Naval Postgraduate School, 2013.
- Stevens, Lauri. "Law Enforcement on Twitter: Five Ways to Kick It Up a Notch." ConnectedCops.Net. Last modified July 12, 2010. <http://connectedcops.net/law-enforcement-on-twitter-five-ways-kick-it-up-a-notch/>.
- . "Social Media in Policing: Nine Steps for Success." *The Police Chief* 77, no. 2 (February 2010). http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display&article_id=2018&issue_id=22010.
- Sutton, Jeannette, C. Ben Gibson, Emma S. Spiro, Cedar League, Sean M. Fitzhugh, and Carter T. Butts. "What it Takes to Get Passed on: Message Content, Style, and Structure as Predictors of Retransmission in the Boston Marathon Bombing Response." *PLoS One* 10, no. 8 (2015): 1–20. doi: [10.1371/journal.pone.0134452](https://doi.org/10.1371/journal.pone.0134452).
- Sutton, Jeannette, Emma S. Spiro, Britta Johnson, Sean Fitzhugh, Ben Gibson, and Carter T. Butts. "Warning Tweets: Serial Transmission of Messages During the Warning Phase of a Disaster Event." *Information, Communication and Society* 17, no. 6 (July, 2014): 765–787. doi: [10.1080/1369118X.2013.862561](https://doi.org/10.1080/1369118X.2013.862561).
- Tobias, Ed. "Using Twitter and Other Social Media Platforms to Provide Situational Awareness During an Incident." *Journal of Business Continuity & Emergency Planning* 5, no. 3 (2011): 208–223.
- Toch, Hans. *Cop Watch: Spectators, Social Media, and Police Reform*. Washington, DC: American Psychological Association, 2012.

- Twitter. "Mountain View Police Department on Twitter." Archive downloaded by author on October 21, 2015. <https://twitter.com/MountainViewPD>.
- . "Palo Alto Police Department on Twitter." Archive downloaded by author on October 21, 2015. <https://twitter.com/PaloAltoPolice>.
- . "Santa Clara Police Department on Twitter." Twitter archive downloaded by author on October 21, 2015. <https://twitter.com/SantaClaraPD>.
- United States Census Bureau. "QuickFacts: Mountain View (city), California." Last modified December 2, 2015. <http://quickfacts.census.gov/qfd/states/06/0649670.html>.
- . "QuickFacts: Palo Alto (city), California." Last modified December 2, 2015. <http://quickfacts.census.gov/qfd/states/06/0655282.html>.
- . "QuickFacts: Santa Clara (city), California." Last modified December 2, 2015. <http://quickfacts.census.gov/qfd/states/06/0669084.html>.
- United States Department of Justice. *After-Action Assessment of the Police Response to the August 2014 Demonstrations in Ferguson, Missouri*. Washington, DC: U.S. Department of Justice, 2015.
- . *Final Report of the President's Task Force on 21st Century Policing*. Washington, DC: U.S. Department of Justice, 2015.
- United States Department of Homeland Security. *Emergency Support Function 15: Standard Operating Procedures*. Washington, DC: U.S. Department of Homeland Security, 2006.
- Warren, Anne Marie, Ainin Sulaiman, and Noor Ismawati Jaafar. "Social Media Effects on Fostering Online Civic Engagement and Building Citizen Trust and Trust in Institutions." *Government Information Quarterly* 31, no. 2 (April, 2014): 291–301. doi: [10.1016/j.giq.2013.11.007](https://doi.org/10.1016/j.giq.2013.11.007).
- Weaver, John, Valerie Cole, and Gloria Huang. "Tech Topics: Red Cross Digital Disaster Volunteers (DDVs) Offer Support through Social Media." *The New Social Worker* 19, no. 4 (October 2012): 30–31.
- Wendling, Cécile. "The Use of Social Media in Risk and Crisis Communication." *OECD Working Papers on Public Governance* 25 (2013). doi: [10.1787/5k3v01fskip9s-en](https://doi.org/10.1787/5k3v01fskip9s-en).
- Westerman, David, Patric R. Spence, and Brandon Van Der Heide. "Social Media as Information Source: Recency of Updates and Credibility of Information." *Journal of Computer-Mediated Communication* 19 (2014): 171–183. doi: [10.1111/jcc4.12041](https://doi.org/10.1111/jcc4.12041).

Winn, Patrick. "Japan Tsunami Disaster: As Japan Scrambles, Twitter Reigns." *Global Post*. March 18, 2011. <http://www.globalpost.com/dispatch/news/regions/asia-pacific/japan/110318/twitter-japan-tsunami>.

Wukich, Clayton, and Alan Steinberg. "Nonprofit and Public Sector Participation in Self-Organizing Information Networks: Twitter Hashtag and Trending Topic Use During Disasters." *Risks, Hazards & Crisis in Public Policy* 4, no. 2 (June 2013): 83–109. doi: [10.1002/rhc3.12036](https://doi.org/10.1002/rhc3.12036).

Yates, Dave and Scott Paquette. "Emergency Knowledge Management and Social Media Technologies: A Case Study of the 2010 Haitian Earthquake." *International Journal of Information Management* 31, no. 1 (2011): 6–13.

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