# Online Appendix

## Examples of Coded Quotations

Table A1 provides examples of quotations (i.e., portions of transcribed interview text) of various sizes taken from different interviews that are coded with single and multiple different codes at different levels of abstraction.

*Table A1: Coded Quotation Examples*

|  |  |
| --- | --- |
| Quotation Example | Code(s) |
| “We work with the US forest service northern research station out of urban. And we help them put on this silviculture course which is once a year this year it's in June, week of June 20th.” (Interview 17) | * Collaboration-Form-USDA
* Collaboration-Purpose-joint education
 |
| “It goes up and down. It’s all economic ties, funding ties. It goes up and down. Right now, we’re in a down but pretty soon it will be up here.” (Interview 51) | * Organizational Capacity-State Budget
 |
| “We kind of mentioned the ranger program and as a side bar I don't know if that figures into anything. Those gentlemen are doing a tremendous amount of public contact and so they I think their presence is way more than writing citations for doing the wrong things on state forest land. They are in our face and I suspect most of their purpose and most of their contacts with people are positive contacts.” (Interview 61) | * Advocating Value-direct
* Ranger
 |
| “I work with big issues here. Just to bring it up, there's, you know, one of the things in our mission statement is, you know, wild character and, you know, just for someone to have the ability to go out in state forest land and enjoy it without hearing an ATV or seeing a bicycle or, you know, we add more and more groups we kind of lose that. It's one of our core values in our mission.” (Interview 42) | * Mission Statement
* Recreation-ATV
* Balancing-stakeholder demands
* Forest experience
 |

## Quotation Counts for Categories and Properties

Table A2 displays the number of quotations (i.e., portions of interview transcription text) within which the categories and their properties were coded. It is an unduplicated count of quotations. A single quotation can only contain the same code once, but it can have multiple different codes. Thus, quotation counts for categories that have multiple codes are only counting the unique number of quotations across all codes under the category. For example, the sub-core category of Balancing contains the two properties of Multiple Role Sets and Stakeholder Demands, which emerged and were coded within some of the same quotations. This quotation coded with both properties was counted for each property but was only counted once for the parent sub-core category of Balancing. The final column provides the percent of total quotations used in the study that each category and property was coded within. For example, Balancing was coded in 155 out of 998 quotations, or 15.53 percent.

*Table A2: Quotation Counts and Percentages for the Theory of Pragmatic Public Management*

|  |  |  |
| --- | --- | --- |
| **Category/Property Name** | **Number of Quotations** | **Percent of Total Quotations (N=998)** |
| **Mission-driven Management** | **737** | **73.85%** |
| **Balancing** | **155** | **15.53%** |
| Multiple Role Sets | 51 | 5.11% |
| Stakeholder Demands | 85 | 8.52% |
| **Advocating Value** | **295** | **29.56%** |
| Direct/Indirect Advocacy | 258 | 25.85% |
| Personal Belief in Organizational Value | 41 | 4.11% |
| Complexity of Value Delivery | 16 | 1.60% |
| **Prudent Collaboration** | **287** | **28.76%** |
| Form | 273 | 27.35% |
| Purpose | 140 | 14.03% |
| **Adapting to Uncertainty** | **220** | **22.04%** |
| Social/Ecological Challenges | 173 | 17.33% |
| Managerial Skills | 64 | 6.41% |
| Seasonality | 39 | 3.91% |
| **Organizational Capacity** | **129** | **12.93%** |
| **Organizational Discretion** | **59** | **5.91%** |

## Intercoder Agreement Process

I selected a 10 percent sample of interviews, which was six interview transcriptions. The sample was chosen at random by using the random number formula in Microsoft Excel: each interview name was placed in a list; the random number formula was entered in cell next to each name; the formula generated a random number; the list was sorted highest to lowest based on the random number; and the top six interviews were selected for the intercoder agreement process.

I followed the intercoder agreement process of Campbell and colleagues (2013). The interviews were initially coded by me and quotations from the interviews (i.e., portions of coded transcription) served as my “units of meaning” for analysis. The quotations and their codes were exported from Atlas.Ti to Microsoft Excel. A single quotation could have one or multiple codes associated with it. The number of quotations and codes varied by interview, with an average of 29 quotations and 27 codes per each interview sampled. A second coder – a graduate student who was familiar with the context of forestry – was provided with the quotations from each interview with the codes stripped away, and a list of codes that were used within each interview. The second coder reviewed the quotations and list of codes and indicated which codes they believed provided the best fit to the quotation, including being able to apply multiple codes to a single quotation and generate their own codes. The two coders reviewed each other’s codes and discussed any discrepancies. Both coders found that the other coder’s codes were usually acceptable.

The level of agreement, or proportion agreement (Campbell et al., 2013) metric was used: the total number agreements (matched codes) divided by the total number of agreements and disagreements (codes used by one coder but not the other). This was calculated for both solo coding and the negotiated agreement across the six interviews (see table A3). The level of agreement for solo coding was poor at about 37 percent; however, it increased substantially to about 84 percent after negotiated agreement. The number of disagreements by coder were extremely similar for both solo coding (about 31 percent) and negotiated agreement (about 8 percent). This provides support for the proposition that the coders believed the other coder’s codes were predominantly appropriate, but that the coder missed using it on the first pass of the data. There were no noticeable improvements from the first to sixth interview in the level of agreement for either solo coding or negotiated agreement, which ranged from 29.5 percent to 45.6 percent and from 80.2 percent to 91.5 percent, respectively.

Table A3: Results of Intercoder Agreement Process

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Rate Type | Matched Code (Agreement) | Coder 1 (Disagreement) | Coder 2 (Disagreement) | Total Codes |
| Solo coding:Number of codes | 178 | 154 | 151 | 483 |
| Solo coding:Level of agreement | 37% | 32% | 31% | - |
| Negotiated agreement: Number of codes | 405 | 39 | 39 | 483 |
| Negotiated agreement: Level of agreement | 84% | 8% | 8% | - |

## Linkages between Sub-core Categories

Analysis of the form and the organization of texts can provide additional insight into the meaning of qualitative data (Fairclough, 1995). Two additional analyses of the qualitative interview indicated signals of linkages between the four sub-core categories. It is important to note that for the analyses I assumed “text” as the transcripts of the qualitative interview data, specifically the quotations (i.e., portions of coded qualitative interview transcription text). Thus, the linkages are based in the discourse of interviewees, which is may not be equivalent to empirical reality.

The first analysis was a co-occurrence count – where two different sub-core categories were coded in the same quotation (see Table A4). For example, 39 quotations were coded as both Adapting to Uncertainty and Advocating Value. The counts are unduplicated counts, meaning that if multiple codes under the same category were used within the same quotation, that quotation was only counted once. According to co-occurrence counts, the strongest linkages are those between Prudent Collaboration and Advocating Value and Balancing and Adapting to Uncertainty. The weakest linkage is between Balancing and Prudent Collaboration.

Table A4: Co-Occurrence Quotation Counts for Sub-core Categories

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **AV** | **AU** | **B** | **PC** |
| **AV** | - | 39 | 34 | 61 |
| **AU** | 39 | - | 54 | 37 |
| **B** | 34 | 54 | - | 18 |
| **PC** | 61 | 37 | 18 | - |

*Note*. AV = Advocating Value; AU = Adapting to Uncertainty; B = Balancing; PC = Prudent Collaboration

The second analysis was a quotation adjacency count – where two different sub-core categories were coded between two adjacent quotations that are within five sentences of each other within the same interview (see Table A5). For example, one of the 106 counts found between Adapting to Uncertainty and Advocating Value was found in interview eighteen between quotation numbers nineteen (coded with Advocating Value) and twenty (coded with Adapting to Uncertainty); and the beginning of quotation twenty was within five sentences of the end of quotation nineteen. According to the quotation adjacency counts, the strongest linkage is between Prudent Collaboration and Advocating Value, which is also the strongest linkage found in the co-occurrence counts. The weakest linkage is between Balancing and Adapting to Uncertainty, which contrasts with the co-occurrence counts.

Table A5: Quotation Adjacency Counts for Sub-core Categories

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **AV** | **AU** | **B** | **PC** |
| **AV** | - | 106 | 80 | 136 |
| **AU** | 106 | - | 67 | 91 |
| **B** | 80 | 67 | - | 54 |
| **PC** | 136 | 91 | 54 | - |

*Note*. AV = Advocating Value; AU = Adapting to Uncertainty; B = Balancing; PC = Prudent Collaboration

Following these signals of linkages between the sub-core categories, I conducted grounded theorizing of the nature of these linkages, which is presented in the following sub-sections.

**Prudent Collaboration and Advocating Value.** There is a strong relationship between these two categories, such that they change in the same manner – as one increases or decreases so does the other. If managers are effective with persuading individuals or organizations about the value of the public service and the organization providing it through Advocating Value, it increases the chances that the persuaded will want to collaborate with the organization as they now believe in the value of the service. The persuaded themselves may also begin to advocate for the public service being provided and the organization providing it. This relationship is likely to be strong when managers are passionate about the public service (or good) they are providing, which was evidenced forest managers at the Bureau.

The relationship is evidenced in certain collaborative relationships between the Bureau and state-wide nonprofit organizations – such as the Pennsylvania Parks and Forests Foundation and Keystone Trail Association. These organizations assist the Bureau in accomplishing its mission by conducting conservation advocacy activities directed at the public and state legislative leaders. This advocacy has the potential to increase Bureau funding levels and create public policy that benefits the state forest and the Bureau.

**Advocating Value and Adapting to Uncertainty.** There is a strong relationship between these two categories, such that Advocating Value protects from the need to conduct Adapting to Uncertainty. In the case of the Bureau, direct advocacy activities, such as advocating the value of forest products to citizens (voters), have the potential to protect against uncertain social challenges, such as decreases in public funding. In other words, managers may protect the Bureau from legislative budget cuts by educating voters about the value of the forest; if the public values the forest, they may not endorse budget cuts, and will not vote for legislators that do endorse such cuts.

**Adapting to Uncertainty and Prudent Collaboration.** There is a moderate relationship between these two categories – Adapting to Uncertainty leads to the creation and maintenance of collaborative relationships, and Prudent Collaboration helps to reduce the negative impacts of uncertainty. For example, all forest districts collaborate with multiple local fire departments located in their district for wildfire prevention and suppression. Wildfires are unpredictable in terms of when and where they occur. By having these collaborative relationships in place, the Bureau can quickly adapt and respond to wildfires, thus reducing their potential negative impact. Similar relationships exist to mitigate the uncertainty of invasive insects, as districts collaborate with adjacent states and the U.S. Forest Service to stay on top of regional threats.

**Balancing and Advocating Value.** There is a moderate relationship between these two categories, such the Balancing demand will influence the type of Advocating Value effort (i.e., direct or indirect advocacy). In the case of the Bureau, this is evidenced in Balancing stakeholder demands. For example, if a manager is experiencing an imbalanced demand for time and attention from logging companies, the manager is being forced to spend more time on indirect advocacy activities (e.g., timber sales) than direct advocacy activities (e.g., citizen outreach).

**Balancing and Prudent Collaboration.** There is a weak relationship between these two categories, such that Balancing influences the types of collaborative relationships sought after and maintained in Prudent Collaboration. In the case of the Bureau, this was evidenced through balancing the opposing traditional and modern role sets. For example, if within the Balancing a manager leaned towards the modern role set, they emphasized the importance of user-group and citizen-based relationships; while a manager that leaned towards the traditional role set emphasized the importance of contractor-based relationships.

**Balancing and Adapting to Uncertainty.** There is a weak relationship between these two categories – increases in activities related to Adapting to Uncertainty will increase the need for Balancing activities. For example, as forest managers deal with increasing uncertain demands related to recreation, they must increase Balancing between these demands and the traditional forest management work. One forest manager noted: “Even though I have the forestry background, I adapted to recreation management which is a lot of people management it’s not just land based, it’s also managing the people” (Interview 43).

## Theory Transferability to Other Policy Contexts

### Homeless Services

Administration of homeless services is done primarily through local community collaboratives referred to as Continuums of Care (HUD Exchange, 2020). The approximately 400 Continuums of Care across the U.S. have different governance structures and actors, but typically involve traditional government agencies and multiple nonprofit and private-sector actors. Indicators of Balancing stakeholder demands would likely be discovered as local governments typically serve as the convener of the collaborative and continually try to Balance the needs of the various collaborative members (e.g., homeless shelters, case management providers, formerly homeless individuals). Indicators of Prudent Collaboration would also likely be discovered as the local governments engage in multiple collaborative endeavors with various organizations that have different functions and goals (e.g., faith-based organizations, property management companies). Funds are limited; thus, the agency must be prudent with which who they engage as part of the collaborative. This concern of limited funding would likely surface as a prominent indicator of Organizational Capacity. Funding for the collaboratives is largely tied to federal funds and the level of funding constrains the scope of services. The funding must be renewed on an annual basis through a nationwide competitive application process (HUD Exchange, 2020). This application process would likely be a prominent indicator of both Advocating Value and Adapting to Uncertainty. Regarding Advocating Value, the collaborative must demonstrate within the competitive application the value that their collaborative provides to the homeless community in their locality. In other words, they must effectively Advocate Value of the public service they provide through a written funding application. The competitive application may also be an indicator of a social challenge of Adapting to Uncertainty – the collaborative must adapt to unexpected year-to-year changes in the application process and award levels.

### Corrections

In addition to indicators of Mission-driven Management being prominent, indicators would also be prominent for at least two of the sub-core categories: Adapting to Uncertainty and Balancing. While correctional institutions are organizations that strive to maintain consistency in operations to ensure safety, indicators of Adapting to Uncertainty would likely be discovered in the form of both social and ecological challenges. Prominent indicators of social challenges would come in the form of problematic behavior of incarcerated individuals, which is unpredictable at times and requires the institution to adapt administrative practices (both short- and long-term) to effectively address such behaviors. Indicators of ecological challenges would also be prevalent as correctional operations are impacted by extreme weather conditions, such as heat waves (Shepard, 2017) and hurricanes (Kozlowska, 2017). Such ecological challenges frequently result in relocating incarcerated individuals to different facilities or restricting them to their housing buildings, both of which substantially disrupt regular operations. Regarding Balancing, indicators would be discovered for how correctional staff confront the internal struggle of Balancing multiple role sets, particularly for how they balance “jailer” versus “rehabilitator” role sets (Smith & Schweitzer, 2012). Balancing in the form of the external struggle of Balancing stakeholder demands would also be discovered. For example, correctional institutions must conduct an ongoing Balancing between demands from visitors for contact visits (i.e., visits conducted not through glass walls) and ensuring that contraband is not introduced into the institution (Boudin, Stutz, & Littman, 2013). Lastly, indicators of Organizational Capacity would be discovered in the form of managers striving to maintain an adequate level of correctional officers, as officer-to-inmate ratios are a substantial concern to maintaining safety (National Institute of Corrections, 2012). Correctional institutions are constantly focused on recruiting and hiring correctional officers due to high turnover (Matz, Woo, & Kim, 2014), since the position comes with high stress and emotional burnout (Lambert, Hogan, Dial, Jiang, & Khondaker, 2012).

## Additional References in the Appendix

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