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Reconsidering Accountability for Environmental Inspectors: Trading 'Compliance by Computer' for Relationship Building

Michelle C. Pautz
University of Dayton, mpautz1@udayton.edu

RECONSIDERING ACCOUNTABILITY FOR ENVIRONMENTAL INSPECTORS: TRADING "COMPLIANCE BY COMPUTER" FOR RELATIONSHIP BUILDING

MICHELLE C. PAUTZ
University of Dayton

ABSTRACT

Demands for government accountability extend into all the aspects of government service and the environmental realm is no different. Environmental inspectors - the front-line workers in environmental protection agencies – are among the many civil servants who face demands for accountability. Unfortunately, although accountability is desirable normatively speaking, in practice it is not so simple. Accountability for environmental inspectors frequently involves measures such as the number of inspections completed, the efficiency of data entry in agency databases, and the turnaround time on inspection reports. Such measures leave environmental inspectors, who ideally want - and practically need - to be in the field, stuck in the office ensuring "compliance by computer;" extensive interviews with environmental inspectors in Virginia and Ohio substantiate these assertions. Yet inspectors desire (along with their supervisors) positive and cooperative relationships with the regulated community. Overwhelming majorities of inspectors in Virginia and Ohio see good relationships as necessary for the success of environmental regulation. The sentiments of inspectors are echoed in much of the accountability literature that questions the tendency to embrace various performance measures over the importance of dialogue and an emphasis on discretion. This paper argues that "compliance by computer" is detrimental to the existing environmental regulatory system and maintains that accountability should be sought by building positive relationships between inspectors and the regulated community.

Discussions of accountability have permeated the field of public administration for some time and seem to occupy our collective conscious when it comes to evaluating the performance of civil servants and agencies alike. Of particular importance in this conversation is the role of street-level bureaucrats, or front-line workers. Although these crucial civil servants are increasingly considered – particularly with regards to accountability (c.f. Hupe and Hill 2007; Pollitt 2003; Day and Klein 1987) – key segments of the front-line worker population continue to be neglected. Most specifically, front-line workers in the environmental policy arena play a significant, yet routinely overlooked, role in protecting and ensuring the quality of the natural environment (there are a few exceptions, however, c.f. Scheberle 2004; Pautz 2009). Environmental inspectors are those civil servants who work predominantly at the state level and interact with the regulated community to ensure compliance with environmental laws. As with all categories of civil servants, it is suspected that environmental inspectors face competing definitions of accountability that can adversely impact performance and achievement of policy goals. Perhaps one of the most important ways to gain insight about the types of accountability these front-line regulators encounter is to ask the regulators themselves.

Environmental inspectors in Virginia and Ohio were interviewed to determine their perceptions on interacting with the regulated community and how accountability is manifested. The results of 34 interviews and subsequent qualitative data analysis provide initial insights into the types of accountability these inspectors would prefer and demonstrate that "compliance by computer" occurs from a seemingly overreliance on output rather than outcome measures. Inspectors in this study would prefer to be in the field interacting with the regulated community and building relationships with them to achieve the best possible

environmental outcomes. Instead, the inherent tensions of pursuing conflicting views of accountability appear to leave these inspectors stuck in the office processing paperwork rather than working with their counterparts in the regulated community to achieve environmental goals. Understanding inspectors' views on accountability are particularly relevant in the environmental policy arena as more alternative policy tools are being embraced that embody fewer attributes of traditional command and control policies.

To investigate the perceptions of inspectors and their work, this exploratory research begins by contextualizing the interviews with a brief look at conceptualizations of accountability and their applicability to the work of regulators. Then the discussion shifts to a more focused consideration of environmental inspectors themselves and why conversations with inspectors directly are long overdue. With this background, the findings from the nearly three dozen interviews are examined before the paper concludes with a look at the implications of shifting from bureaucratic to professional accountability for environmental inspectors.

ACCOUNTABILITY

Before exploring the remarks of nearly three dozen environmental inspectors, first we must examine accountability in the context of these front-line regulators. Accountability, despite its ubiquity in public administration (c.f. Frederickson 2007), does not have a standard, widely accepted definition (c.f. Koppell 2005). Romzek (2000) defines accountability as the process of holding someone answerable for performance. There is extensive discussion regarding the dimensions and types of accountability (c.f. Romzek & Dubnick 1987; Romzek 2000; Behn 2001; Gormley & Balla 2004; Koppell 2005) and Frederickson (2007), among others, notes the dominance of

accountability discussions in public administration and how much of those discussions focus on accountability as "little more than measures of organizational performance" (11). Without delving into the intricacies of the debate swirling around accountability's definition, recall Romzek and Dubnick's (1987) four types of accountability: legal, bureaucratic, professional, and political. This typology is devised based on the source of agency control (internal or external) and the degree of control over agency actions (high or low).

Accountability is particularly important in the work of the civil service since government is instituted to serve the public interest. Although academic discussions struggle to define public interest, the public interest is both "a verbal symbol [and] an institutional force" (Goodsell 1990, 107). Goodsell (1990) argues that civil servants are the leading embodiment and proponent of the public interest. Such sentiments are echoed in discussions of the roles of public administrators and to whom they are answerable (c.f. Denhardt and Denhardt 2003; Behn 2001; Hamilton 2007).

More specifically, accountability concerns are pronounced in the regulatory state because of fears of regulatory capture by the regulated community and, therefore, a disregard for the public interest. Capture theory or economic regulatory theory, maintains that regulatory action (or inaction) is dictated by individuals pursuing their own interests (c.f. Stigler 1971; Peltzman 1976). The interests of regulatory actors are diverse and their actions may be guided by a plethora of motives. For instance, decision making may be dictated by monetary considerations, job retention or future employment aspirations (e.g. the "revolving door" effect), self-gratification, or the desire for tranquility between entities (Gormley 1979; Levine & Forrence 1990; Laffont & Tirole 1991). In the case of environmental inspectors, the longstanding sentiment is that inspectors have a great deal

of discretion in their job duties leaving them susceptible to undue influence that does not serve the public. Accordingly, to mitigate capture fears, inspectors are held accountable through various mechanisms. This mention of capture theory is made because it helps to understand why accountability concerns are so pronounced in the regulatory arena despite a sizable and growing chorus of literature that refutes capture theory of regulation and posits a more positive view of civil servants and regulatory agencies (c.f. Croley 2008; Joskow & Noll 1981; Viscusi, Vernon, & Harrington 2005). Indeed, Pautz (2009) argues positive, trusting relationships are vital between inspectors and the regulated community for better environmental outcomes.

　　　　Despite the prominence of accountability in public administration and governance discussions and long-standing concerns of regulatory capture of civil servants, one might expect an extensive discussion of accountability in the regulatory state. More specifically, since front-line regulators play an integral role in the implementation and monitoring of regulations and utilize discretion in those responsibilities, discussions of accountability are undoubtedly important. However, such a discussion is largely absent. Scott (2000) notes that accountability is a multilevel concept in the regulatory state and Lodge (2004) expands this discussion to consider how to make accountability improvements. Accordingly, it is of little surprise that front-line workers, despite their significance in the regulatory state, are generally ignored in these discussions of regulation and accountability since this population of actors is frequently omitted (c.f. Lipsky 1980; Maynard-Moody and Musheno 2003, among others).

ACCOUNTABILITY AND ENVIRONMENTAL INSPECTORS

Environmental inspectors experience daily the demands of accountability in their work interacting with the regulated community. In most environmental protection agencies, inspectors specialize in a particular environmental media (or area), such as air, water, or waste. An individual inspector is responsible for an array of facilities that hold a permit to operate and emit specified levels of pollution. The actual number of facilities an inspector is responsible for can range from 20 or 30 to several hundred, depending on the type of facility and why it is regulated (Pautz 2009). These facilities are generally scattered over a given geographic area and the types of operations can vary dramatically. For example, an inspector may be responsible for inspecting facilities that range from a cigarette producing plant to a metal scrap yard to a dry cleaner. Thus, the inspector must be conversant with the operations and pollution abatement technologies for a wide array of often unrelated facilities.

The central component of an inspector's job responsibilities is the physical site inspection of a facility to determine compliance with environmental regulations. "As the word 'inspector' suggests, routine inspections and check visits are the 'traditional' methods of operation for many regulatory officials and ones which are regarded as fundamental by field staff" (Hutter 1997, 107). In addition to the physical site inspections, the inspector has a variety of other duties, including extensive recordkeeping and complaints investigation.

This discussion has explored the roles of environmental inspectors under the traditional command and control regulatory regime. Although this approach to environmental protection continues to be the dominant model, movement towards the "next-generation" of

environmental policies appears to be underway in some areas (c.f. Durant, Fiorino, and O'Leary 2004; Eisner 2006; Fiorino 2006). In comparison to command and control regulations, next-generation policies are cooperative not confrontational, comprehensive rather than fragmented, and flexible instead of rigid (Chertow and Esty 1997, 4). These policies require regulators and the regulated community to work together to devise courses of action to achieve prescribed outcomes. Accordingly, next-generation policies, which will be explored more extensively in a subsequent section, are less prescriptive and require greater flexibility – thus, they are dependent on inspectors exercising greater discretion. As such, accountability becomes even more of a concern.

This brief review of inspectors' primary duties highlights the significant role they play in environmental regulation. Accordingly, one might expect that they are afforded considerable attention, but inspectors are typically granted only passing acknowledgments. Bardach and Kagan (1982/2002), for example, discuss environmental inspectors as part of their larger examination of "regulatory unreasonableness" in the United States. In the lone chapter devoted to inspectors, they address the characteristics of "good inspectors" by drawing parallels with the literature on "good cops." According to Bardach and Kagan, an inspector should be adept at resolving disputes and other problems while endeavoring to keep disagreements and difficulties from turning into adversarial relationships; inspectors should have sufficient knowledge and understanding of technical issues.

Then again, perhaps it is not surprising that these front-line workers are frequently overlooked. Hummel (1991) and Schmidt (1993), among others, have discussed the tendency to neglect the value that local knowledge brings to discussions of policy formation and implementation. Pautz and Schnitzer (2008) call attention

to overlooked populations in environmental policymaking, notably inspectors and publics, but do not connect their roles with accountability.

May (2007), however, is an exception when he applies Romzek and Dubnick's (1987) typology of accountability to regulatory regimes and the actions of regulators. In particular, he focuses on two of the four types of accountability directly related to the work of regulators: bureaucratic and professional accountability. Bureaucratic accountability refers to accountability structures that foster supervisory control over a range of agency actions (Romzek and Dubnick 228). More specifically, close supervision and detailed standard operating procedures are essential to ensure that orders are followed. May takes Romzek and Dubnick's description one step further in its application to the work of regulators and notes that regulators' discretion is curtailed through the use of checklists and other bureaucratic controls that "limit discretion of inspectors and guide their actions" (May 12). Applied to front-line environmental regulators, bureaucratic accountability is observable in the use of detailed checklists for inspections, prescribed standard operating procedures for conducting on-site sampling and inspections, as well as set procedures for reviewing reports from regulated entities, and enormous amounts of paperwork to ensure that a satisfactory paper trail exists for compliance determinations. These accountability mechanisms coincide well with the traditional, command and control approach to environmental regulations. Emphasis is placed on standardization of methods and numerous reporting requirements.

Professional accountability, by contrast, is characterized by deference to professional expertise and flexibility in decision making and actions because of the complex nature of the issues (Romzek and Dubnick 229). May (2007) picks up on the importance of regulators'

discretion, as governed by professional knowledge and experience, in achieving desired regulatory outcomes. Instead of focusing on specific and stringent procedures and measures, regulators instead exercise professional judgment to achieve desired results (May 12). For environmental inspectors, professional accountability would be manifested in a fundamentally different way than bureaucratic accountability since the former recognizes the professional expertise of the inspectors and therefore affords inspectors deference in their actions. More specifically, professional accountability may be observable through less rigid checklists and procedures for inspectors to follow in the field in exchange for general guidance and more flexibility for the inspectors to work with the regulated community to achieve environmental outcomes in a cooperative manner while adhering to the dictates of existing environmental regulations. Here inspectors would be given more flexibility in pursuing outcomes with less rigidity in the process. Professional accountability tends to coincide with next generation environmental policies that tend to provide more general guidance and less specific provisions to achieve environmental outcomes (a more thorough discussion of next generation policies follows in a subsequent section).[1]

While bureaucratic accountability seems to be the norm in the regulatory state in keeping with command and control approaches, professional accountability appears to be the desired form of accountability among regulatory theorists (May 2007). Sparrow (2000) and Bardach and Kagan (1982/2002) argue that professional accountability is the best method of achieving desired regulatory outcomes and protecting against regulatory abuse and capture. Regulators should be able to adapt a "pragmatic approach"

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[1] Although this is not to say that professional accountability could not find a place under the traditional, command and control regulatory structure of existing environmental regulations. An example of this application follows.

to dealing with the regulated community since a 'one-size fits all' approach is not feasible (Sparrow 2000; May 2007). Regulators need the flexibility to deal with firms as the situation warrants, as guided by their professional expertise and judgment to achieve desired outcomes for the public, and rigid procedures and policies stymie such efforts. The results of stringent controls on regulators are often less desirable policy outcomes.

Consider the following example that demonstrates different types of accountability and illustrates the potential importance of professional accountability. A solid waste inspector is visiting one of the landfills she is responsible for overseeing after a significant period of rain in the region. After a turbulent compliance history since the landfill began operation, this inspector was newly assigned to the site and became determined to bring this landfill into compliance and keep it in compliance. She and the staff at the landfill worked together for the first year or so going through many issues and gaining the trust of one another. In the process, the landfill was more and more forthcoming about some of the challenges it was facing in compliance and she was able to help them devise solutions to solve myriad problems. For the last few years, this particular landfill has been in compliance, even with the pesky paperwork requirements that baffle most. A major issue with landfills is erosion for understandable reasons. Upon arrival at the landfill, the inspector noticed some significant areas of erosion that would indicate the facility is out of compliance. Instead of automatically citing the landfill for its erosion problems – unquestionably due to the unseasonable and significant rains the region just experienced – the inspector, exercising professional judgment, points out the problems to the landfill operators (which they are already well aware) and tells them to take corrective measures and she will be back in a week to follow up. Here, the dictates of bureaucratic accountability

and its rigid procedures would dictate a citation; however, professional accountability allowed the inspector to recognize that the landfill is abiding by the rules but is coping with weather patterns beyond its control and is temporarily out of compliance.   Instead of being unreasonable, the inspector, with her years of experience with the landfill, decided the best course of action was to utilize her discretion and allow the facility to come into compliance on its own instead of jumping to an adversarial posture that would have unknown and incalculable repercussions.[2]

Although one type of accountability appears to be favored among regulatory scholars (c.f. Sparrow 2000; Bardach and Kagan 1982/2002; May 2007), one could reasonably surmise that multiple views on accountability exist in regulatory agencies.   Yet, these multiple perspectives on accountability can make public agencies and their civil servants "mad" as the different approaches are often in tension with one another (Koppell 2005). These competing types of accountability can often lead to poor performance since different forms of accountability may be in conflict with one another (Romzek and Dubnick 1987; Behn 2001; Koppell 2005).[3]   The preceding discussion gives rise to a number of questions, including: what are the types of accountability being pursued in the environmental regulatory system; and, perhaps more importantly, what type of accountability should be pursued?

There are no easy answers to the aforementioned questions. Perhaps as a starting point since accountability

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[2] This example demonstrates that professional accountability could find a place in the traditional environmental regulatory structure, not just with next generation environmental policies.

[3] Furthermore, as Dubnick (2005) reminds us, the assumption is routinely made that there is a positive relationship between accountability and performance, yet that assumption is frequently untested and may indeed be false.

is being demanded of inspectors, both because of the general trend toward increasing accountability in a democratic society and because of persistent fears of regulatory capture, we should consider inspectors' own views of their jobs and their work with the regulated community.   More specifically, much of the concern regarding accountability stems from the interactions inspectors have with the regulated community; therefore, we should focus our investigation on these interactions. As previously discussed, it is important not to overlook the experiences of those on the ground level, even though the propensity is to focus elsewhere (c.f. Hummel 1991; Schmidt 1993).   Furthermore, Hedge, Menzel, and Williams (1988) note that regulators' perceptions impact how they do their jobs. In particular, by investigating inspectors' desires and challenges in regulatory interactions, we can better assess the accountability mechanisms they face in their day-to-day responsibilities. These insights may enable us to determine whether bureaucratic accountability or professional accountability is emphasized.   If we can discern which accountability mechanisms seem to be stressed, we can then begin an important discussion about what might be most appropriate in the environmental regulatory state and what changes should come in the future.

INSPECTORS AND THEIR VIEWS

Before outlining the parameters of this exploratory study, it is worth noting the significance of states in environmental policy and why state regulators were selected instead of federal regulators.   Lowry (1992) succinctly states: "[s]tates matter. Policies are not simply created by national officials and then routinely implemented by state and local governments as if they were unquestioning automatons in some Weberian machine" (3-

4). Since states have been granted more and more authority for meeting federal environmental standards, their responsibilities have grown. "Consequently, the operational responsibility for most of EPA's major programs currently lies with the states, and EPA routinely relies on states to implement the full range of environmental responsibilities associated with these programs, such as the Clean Air Act and the Clean Water Act" (GAO 2002, 4). These broad authorizations have given the states "considerable latitude" in environmental regulation (Sigman 2003, 108).

        Several indicators depict the scope of state involvement in environmental regulation. The Environmental Council of States (ECOS) reports, for example, that the states regulated over 1.75 million sites in 1999, inspected those sites more than 500,000 times and made over 449,000 additional compliance evaluations in the same year (ECOS 2001).[4] According to Rabe (2006), the states

> collectively issue more than 90 percent of all environmental permits, complete more than 75 percent of all environmental enforcement actions, and rely on the federal government for less than 25 percent of their total funding on environmental and natural resource concerns (35-36).

Thus, "[i]t is no exaggeration to conclude that policy depends on the capacity and willingness of individual states to implement federal policy" (Eisner 2006, 36).

        In keeping with the significance of states in environmental protection, two states, Virginia and Ohio, were selected to begin exploring the perceptions and

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[4] Unfortunately, more recent data are not available from the ECOS on the numbers of regulated facilities and inspections conducted by the states.

approaches of front-line regulators in environmental protection. Both states were selected chiefly for ease of access since face-to-face interviews were sought as the primary means of data collection. Virginia and Ohio are among the middle range and majority of states in its commitment to and capacity for environmental protection (O'Leary and Yandle, 2000; Rabe 2006; Wingfield and Marcus 2007).[5] Therefore, both states should allow for insights into an average state environmental protection agency.

Interviews with 34 state level environmental inspectors were conducted in Ohio and Virginia. The semi-structured, one-on-one interviews were conducted in person with two exceptions.[6] Twenty-two inspectors from the Virginia Department of Environmental Quality[7] (DEQ) and 12 inspectors from the Ohio Environmental Protection Agency[8] (OEPA) were interviewed. Voluntary participation from inspectors in both agencies was sought, although the procedures vary slightly based on access

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[5] O'Leary and Yandle (2000) report the Lester Environmental Protection Grades for 50 states which are compiled based on a state's commitment to environmental quality and its institutional capacity for environmental management. Both Virginia and Ohio received a "C" rating and the majority of states (30) fell in the range of either a "B" or "C." These grades were based on states' commitment to environmental quality and their institutional capacity for environmental management.

[6] All but two of the 34 interviews were conducted in person; two interviews with DEQ inspectors were conducted via phone at the request of the inspectors for logistical reasons. Moreover, the interviews were not recorded because pilot interviews revealed a nervousness of inspectors to be candid in their responses. This proved to be the correct decision for these interviews because a number of interviewees remarked "since you're not recording this, I'll tell you about…", for example.

[7] The 22 DEQ inspectors represent all seven regions of Virginia (Northern Virginia, Piedmont, South Central, Southwest, Tidewater, West Central, and Valley). The interviews were conducted in Summer 2007.

[8] The 12 OEPA inspectors were from the southwest regional office. The interviews were conducted Summer 2009.

directives given.[9]   The 22 inspectors interviewed from DEQ represent approximately 13 percent of the inspectors in DEQ.[10]   The inspectors from OEPA are all based in the Southwest District Office located in Dayton and they represent approximately 10 percent of the entire district staff.[11]   Accordingly, although 34 inspectors constitute a sizable group to conduct one-on-one interviews with, these inspectors represent a small percentage of both states' inspector populations. As such, it is important to recognize the limits of generalizablility that are possible from this study's findings.[12]   Despite these limitations, this exploratory research is important in calling attention to the accountability challenges environmental regulators may face, and more generally, attention to front-line actors in environmental policy.

The 34 inspectors comprise a relatively diverse group of individuals.   As might be expected with

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[9] To gain access to DEQ, the regional supervisor for each media in all seven regions was contacted and based upon the responses of each of the 21 supervisors, I sought interviews with inspectors across regions and environmental media. Some supervisors sent me the names and contact information for inspectors I could speak with while other supervisors said I could contact whomever and still other supervisors ignored repeated inquiries. Naturally selection bias becomes a concern since I was not able to draw a random sample of inspectors, but given the necessity of gaining agency permission and access, I had to seek interviews in accordance with agency directions.

[10] The figure of 13 percent is based on the total number of inspectors budgeted for in the agency, not the current number of filled inspector positions.

[11] To gain access to the OEPA, several meetings were held with the leadership of the regional office and it was decided that I would directly approach the region's staff at one of their regularly scheduled staff meetings. At the meeting, I made brief remarks about the nature of the research and what type of involvement I was seeking from the front-line regulators. Afterwards, I invited regulators to sign-up to be contacted for an interview and interviews were secured with all OEPA staff that expressed an interest in being interviewed.

[12] Nonresponse bias of course is a concern, however, neither agency was able to provide me background data on their regulators as a whole so that comparisons between the interview sample and the larger population could be made. The inability to explore the nonresponse bias is not ideal, however, this research is exploratory and makes limited generalizability claims.

environmental professionals, 76 percent of the inspectors interviewed were male.[13]   The average inspector has been in his/her job for more than 10 years.   All three major environmental media (air, water, and waste) were represented in the sample: 13 air inspectors[14], 13 water inspectors, and eight waste inspectors were interviewed.

Essential Elements of Interactions

        Accountability   concerns   stem   from   inspectors' routine   interactions   with   members   of   the   regulated community.   These interviews probe inspectors for what they want in these interactions so we can gain insights into what the front-line regulators desire in their regulatory interactions; and, therefore, might allow us to deduce what forms of accountability they prefer.   Inspectors were asked what makes for good interactions with members of the regulated community   and   these   essential   elements   are found in Table 1.

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[13] It is not surprising to find a significant majority of regulators were male considering the dominance of the environmental sciences fields by men for quite some time.

[14] No air inspectors from OEPA were interviewed because although there is a division of air pollution in OEPA, most of the compliance and enforcement oversight with air regulations in the SWDO is relegated to local entities that are responsible for such measures, such as the Regional Air Pollution Control Agency (RAPCA).

Table 1
Essential Elements of Interactions with Regulated Community (N=34)

Element[15]	*Percentage (N)[16]*
Cooperation/Positive Attitude to Work Together	53 percent (18)
Communication and Responsiveness	41 percent (14)
Build rapport, relationships	38 percent (13)
Knowledgeable	32 percent (11)
Understand the other side, perspective	26 percent (9)
Explain purpose, help	24 percent (8)
Openness/Honesty	21 percent (7)
Respect	18 percent (6)

Although there are several striking observations from these findings, the dominant theme inspectors report they want in their interactions is a good working relationship with the regulated community. Cooperation and communication are the most common elements that inspectors want in their interactions. One may infer that relationships where both sides cooperate, communicate, understand each other, and are open require a significant degree of flexibility and discretion on the part of the inspectors to foster. It is fascinating to note that inspectors did not emphasize that good interactions with the regulated community are characterized by the regulated community using the "correct" pollution abatement technology. Rather inspectors seem to indicate that the cooperative interactions are most important.

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[15] Inspectors were asked what are the essential elements for positive interactions with the regulated community; they were not asked for a predetermined number, simply whatever came to mind.
[16] The percentage indicates the percent of inspectors who offered each essential element and the actual number of inspectors is in parentheses. Therefore, 53 percent or 18 inspectors said cooperation was an essential element. An inspector may have offered cooperation, communication, and respect as essential elements.

These findings seem to align with the attributes of professional accountability previously discussed. Inspectors want to exercise professional judgment to work together with the regulated community and help them achieve compliance with environmental regulations. Inspectors frequently report that the best outcomes result when the two sides work together to solve a problem. Working together requires that inspectors have the flexibility and discretion that comes with professional judgment. Being forced to follow set procedures – indicative of bureaucratic accountability – could limit relationship building efforts.

The genesis for many of these essential elements undoubtedly comes from the varied experiences of the inspectors. These experiences are illustrated through several stories.[17] One air inspector at DEQ conveyed his experiences with a printing facility. The inspector was at the facility conducting a routine inspection and noted that the rag buckets were uncovered – a permit violation. The facility personnel accompanying the inspector on his inspection were encouraged to remedy the problem so they would not face a penalty. However, the facility official did not take the opportunity to do so. This experience shows inspectors desiring facility personnel to be cooperative and be receptive to open communications. A water inspector noted that showing an interest in a facility, beyond the inspector's reasons for being there, goes a long way in building a relationship with the facility personnel. This inspector was visiting a poultry processing plant and eagerly took the facility tour, complete with a trip to the

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[17] It is worth noting that when interviewees were asked to convey stories about positive experiences with the regulated community, inspectors frequently remarked that there were so many good stories, it was difficult to pick one or two to talk about. Inspectors were asked to relay stories to help exemplify what they thought were essential elements in their interactions with the regulated community.

"kill floor."   At the close of the visit, the inspector was surprised to observe how pleased the facility official was that the inspector took a genuine interest in the facility's operation and the facility official had an opportunity to put his company's work on display. Another air inspector was working with a paper and cardboard manufacturer that needed to switch to a fuel that contained a higher sulfur content for production purposes. The facility official was unsure what permit modifications might be needed, so the official contacted the inspector so that they could work together to figure out what steps the facility needed to take to switch fuels. A similar story is conveyed by an OEPA water inspector who was dealing with a facility that exceeded its cooper limits. The facility official wanted to cooperate with OEPA and was open enough to answer questions and work with the inspector to figure out that the extra cooper was coming from mop water being dumped down the drain, not industrial processes. It could be argued that these experiences demonstrate that positive relationships lead to better environmental outcomes for the public because compliance can be achieved more quickly rather than every issue resorting to an acrimonious fight over which side is correct.

Challenges and Obstacles in Interactions

It is equally important to consider what inspectors find most challenging in their interactions with the regulated community and what they would most like to see changed.   Understanding the challenges inspectors face might provide insights into the procedures and other control mechanisms that they find frustrating and these obstacles may illuminate any undesirable aspects of accountability. Each inspector was asked what are the biggest challenges or obstacles in interacting with the regulated community and the results are reported in Table 2.

Table 2.
Challenges/Obstacles in Interactions with Regulated Community (N=33)[18]

Challenge/Obstacle[19]	Percentage (N)[20]
Complexity of regulations	45 percent (15)
Burdensome paperwork and procedures	33 percent (11)
CEDS (internal DEQ database)	21 percent (7)
Negative perceptions of government	21 percent (7)
Inspector issues (e.g. low morale, entry level position)	21 percent (7)
Need for more flexibility/discretion	18 percent (6)

These findings may not be surprising given that they echo many common complaints of front-line workers (c.f. Lipsky 1980; Maynard-Moody and Musheno 2003). The most common challenge inspectors reported was trying to contend with the complexity of the regulations. Inspectors expressed frustration at the complexities of both federal and state regulations that often render them incomprehensible even to the inspectors tasked with enforcing them. One air inspector noted that the confusion the regulations cause frustrates not only the inspectors, but the facility personnel too. Often frustration levels grow over the regulations which can impede the interaction of inspectors and facility personnel. Adding to these issues, an OEPA waste inspector lamented that waste regulations have to be revised every five years and the almost constant revision leaves regulators and the regulated community struggling to keep up with changes. He would rather see

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[18] There is missing data for one inspector interview.

[19] Interviewees were asked: what are the biggest challenges you face in interacting with the regulated community. The question was open-ended and responses were organized after the interviews were completed. Interviewees were not asked for a predetermined number of challenges.

[20] Number of interviewees who stated a particular challenge, both raw number and percentage of total interviewees. The percentages reflect the frequency; therefore, they do not add to 100 percent.

the regulations "reexamined" instead of "rewritten" because, after all, "if it's not broke, don't fix [it]." Complex statutes are a traditional way legislatures endeavor to control bureaucracies and stem fears of regulatory capture. Moreover, confusing regulations written by a regulatory agency are often a means to demonstrate accountability to their oversight bodies.

Besides complaints about the regulations themselves, most of the other reported challenges have to deal with issues related to bureaucratic accountability. Inspectors complain about paperwork that keeps them in the office and tied to the computer checking off boxes in databases; inspectors at DEQ frequently criticized the agency's internal database (Comprehensive Environmental Data System or CEDS) and lamented that it was one of the most frustrating aspects of their jobs. An air inspector reported that he became so frustrated with CEDS that he developed his own tracking spreadsheet to keep up with his facilities; his supervisor liked the inspector's own spreadsheet so much more than CEDS that he asked the inspector for a copy of the file so he could use it too. An OEPA water inspector said his biggest aggravation is the procedures he and the regulated community have to follow that makes the system inflexible; he would prefer a "more nimble" system to better accomplish environmental goals. Another OEPA water inspector reported that that the system is turning "into a paper program" where compliance boils down to pushing paper instead of having a "meaningful" environmental protection system.

Additionally, a handful of inspectors indicated that they simply needed more flexibility and discretion to do their jobs. This finding is intriguing as it lends support to Sparrow (2000), Bardach and Kagan (1982/2002), and others, who note that regulators need more flexibility and discretion in their work to help produce the desired regulatory outcomes.

Perhaps these challenges are best summed up by an air inspector in Virginia who reported that the way environmental enforcement works is essentially "compliance by computer." In other words, databases designed to ensure permit conditions are met have become the de facto mechanisms for determining environmental performance by simply checking off boxes, such as did the facility turn in their report on time. The same inspector said it is vital for inspectors to "get out as often" as possible because that is where environmental compliance is truly determined. This inspector, along with his colleagues, routinely indicated that although checklists can be useful at times, they do not ensure environmental protection. Being in the field at a facility, observing the facility's operations, and interacting with the individuals at the facility is the best means of ensuring the health of the environment, according to this inspector.

One may conclude that the challenges inspectors report are more closely aligned with bureaucratic accountability. Inspectors in this study are frustrated over complexity of regulations that dictate how they are supposed to do almost everything, paperwork and other "bureaucratic" procedures, and even an agency database. It is reasonable to surmise that these procedures are in place to maintain bureaucratic accountability, yet these are the sources of greatest frustration to inspectors in their work interacting with the regulated community because it constrains their actions of seeking desired environmental outcomes for the public. This is not to say that inspectors do not understand why these circumstances exist, but they are frustrating nonetheless and inspectors would like them to change. Inspectors in this study do not report frustrations with the freedom or discretion they have in their interactions, by contrast.

DISCUSSION AND IMPLICATIONS

The 34 inspectors in this study express numerous frustrations in interacting with the regulated community. These complaints, including burdensome paperwork that keeps them in the office, internal databases, and an outright desire for more flexibility, lend support to existing research that regulators face bureaucratic accountability controls (c.f. May 2007). Yet these inspectors indicate that they want positive working relationships with members of the regulated community. More specifically, they strive to build relationships with their counterparts, they want open and honest communication, and they want to help them achieve and maintain compliance. Positive relationships are more efficient in ensuring environmental outcomes compared to adversarial ones (Pautz 2009). Regardless of the types of accountability mechanisms in place, however, there must be some form of accountability for inspectors to guard against regulatory capture and ensure the public interest is being served. To achieve these types of interactions, it may be argued that inspectors need a decreased emphasis on bureaucratic accountability in favor of professional accountability controls.

It is unsurprising that inspectors complain of bureaucratic accountability controls for several reasons. First, performance measures – which are intertwined in accountability conversations – of state environmental agencies clearly emphasize output measurements (Rechtschaffen and Markell 2003, 181-187; Gormley 2000). Output measures related to environmental inspectors include the number of inspections conducted, the number of enforcement actions taken, the amounts of fines recovered, and response rates to the regulated community (e.g. turnaround time on report submission). By contrast, outcome measures might include the number of tons of a pollutant prevented from escaping into the atmosphere or

the increase in energy efficiency from one quarter to another. "Still most states continue to rely more on "output" measures (such as the number of inspections conducted) rather than "outcome" measures (such as changes in air or water quality), despite the latter's greater importance." (Gormley and Balla 2004, 121). Part of this reliance stems from the rigid oversight requirements state environmental agencies face from U.S. EPA (c.f. Scheberle 2004; Rechtschaffen and Markell 2003; Lowry 1992). "EPA has traditionally evaluated enforcement programs primarily by measuring agency activities or outputs – what has been referred to derisively as a "bean counting" approach…These traditional indicies have been relied on because they are relatively easy to measure and report …" (Rechtschaffen and Markell 2003, 66). A focus on outputs is vastly more common than outcome measures, such as environmental benefits and rates of noncompliance, in state agencies for a host of reasons (Rechtschaffen and Markell 2003; Gormley 2000). Output data is relatively easy to tabulate and continues to be modus operandi for U.S. EPA's state reporting requirements (Rechtschaffen and Markell 2003).

In the cases of both Virginia and Ohio, a perusal of each agency's website communicates an emphasis on output data. For example, readily available on DEQ's website are reports to the Virginia General Assembly. The 2009 Report on Air Quality conveys raw data about the number of inspections completed (2,601), the number of stack tests observed (77), and the number of enforcement actions (483) (Virginia DEQ 2009). OEPA's readily available 2009 Annual Report also presents similar performance measurement data. After detailing the number of hazardous waste facilities inspected (551) and the number of citizens' complaints investigated (331), the Division of Hazardous Waste issued enforcement orders

that assed $701,575 in penalties (OEPA Annual Report 2009, 6).

Additionally, outcome data is far more difficult to compute technically speaking and is often wrought with debate if figures are actually calculated (Rechtschaffen and Markell 2003, Gormley 2000). For instance, calculating the number of tons of a pollutant that did not reach the atmosphere is far more complex than calculating how many times an inspector visited a particular facility. Moreover, both states and U.S. EPA seem to resist any more than token efforts to embrace outcome measurements (Rechtschaffen and Markell 2003, 296-307). Continued reliance on output measures only further entrenches an emphasis on bureaucratic accountability from the inspectors' perspective.

Second, these findings are unsurprising in light of existing literature on front-line workers more generally and environmental inspectors more explicitly. The motivations for more flexibility and discretion to build relationships may come from the inspectors' need to develop coping strategies because of the "impossible" nature of their jobs (Lipsky 1980; Fineman 1998). Front-line workers in a variety of contexts are routinely overburdened and develop methods of better dealing with the demands they face. Regulators may believe that the best way to deal with enormous facility loads is to have positive working relationships with facility officials. Or the motivations may stem from an earnest desire to work with the regulated community to achieve the desired regulatory outcomes, as the broader regulatory enforcement literature would substantiate (c.f. Hutter 1989; Bardach and Kagan 1982/2002; Hutter 1997; May and Burby 1998, Pautz 2009). These adverse reactions to the rigidity and complexity that inspectors face in their day-to-day responsibilities are to be expected.

MOVEMENT TOWARD PROFESSIONAL ACCOUNTABILITY

Although bureaucratic accountability controls are expected in the work of environmental regulators that does not indicate that they are the best means of ensuring accountability. Despite the inevitable resistance likely to accompany a shift in controls, the front-line regulators interviewed here provide some initial support for a move beyond bureaucratic accountability toward professional accountability, or at the very least, some combination of these two means of control. As previously discussed, the regulatory literature also appears to support movement toward professional accountability (c.f. May 2007; Sparrow 2000). The rationale for a movement toward professional accountability and away from bureaucratic accountability is manifold. Such a shift does not mean that abandoning bureaucratic accountability controls is the aim; rather, given the findings from the inspector interviews reported here contextualized in the broader discussions of the environmental regulatory state, movement towards professional accountability controls might be appropriate.

First, we should listen to the front-line regulators and their experiences on the ground to help inform decisions about the regulatory state. As previously noted, those individuals on the front-lines are routinely ignored and their experiences discounted even though they are the ones frequently in the best position to assess policy implementation and recommend modifications (c.f. Hummel 1991; Schmidt 1993; Pautz and Schnitzer 2008). Specifically related to environmental policy, inspectors are likely to have much needed assessments of the regulated community, their intentions, their struggles, and what changes may be needed. The inspectors interviewed here report that they frequently feel bound to their offices and constrained by complex regulations and burdensome

procedures that get in the way of building relationships with the regulated community. Numerous questions and directions for future study – both empirical and normative – arise. First, do we want front-line regulators in the office ensuring environmental protection or would we rather they be in the field working with the regulated community to achieve environmental protection? Turnaround time on an inspection report hardly indicates environmental protection, yet that is one of the measures we use to assess environmental performance and ensure accountability. It would seem that assessing environmental protection is more easily accomplished outside of the office; however, paperwork, along with other reporting requirements, is a significant portion of many environmental regulations. Moreover, if inspectors build relationships with the regulated community, how can we guard against regulatory capture to ensure the public's interests are being served? Although the research presented here offers no ready answers to these important questions, thoughtful study and discussion of these issues must occur as environmental regulation continues to evolve.

Second, environmental policy in the U.S. is beginning to undergo a shift away from traditional command and control regulation, or first generation policies[21], toward more flexible and innovative next generation policies that coincide well with professional accountability and increased reliance on front-line regulators (c.f. Eisner 2006; Fiorino 2006; Durant, Fiorino, and O'Leary 2004; Sparrow 2000; Wilbanks and Stern 2002). Throughout the history of environmental regulation in the U.S., one particular regulatory approach has

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[21] The term "first-generation" environmental policies may indicate that such policies are obsolete when that is not the intended meaning. Instead, this common term refers to the initial, dominant approach to environmental policy and many of its characteristics may indeed be appropriate for current environmental policy.

dominated the policy arena – command and control regulation. It is this strategy that has become synonymous with the phrase "first generation environmental policies." Command and control implies a top-down model that is heavily centralized (Hoffman et. al 2002, 821; Kraft 2001, 202-203). Most of the major environmental legislation in the U.S. is based on command and control regulation and these statutes have resulted in dramatic improvements in the health and overall condition of the environment (c.f. Davies and Mazurek 1997; Andrews 1999; Kraft 2007). Significant reductions in major air pollutants have been realized, and many harmful pollutants have been all but eliminated (e.g. lead, CFCs).

Because of the specificity of these regulations, regulators are given the relatively straightforward task of overseeing compliance with the regulations. Inspectors have to determine if a certain emissions level is being met or if a particular type of abatement technology is employed. If an inspector finds a compliance problem, there are prescribed enforcement proceedings to follow. Although there is opportunity for some discretion on the part of an inspector, the standards and consequences if they are not met are defined with the aim of minimizing the opportunity for regulatory capture. These efforts to stem the threat of capture encourage inspectors to "go by the book" and adopt a regulatory approach that is closer to the deterrence end of the spectrum rather than a more accommodative approach – at least in theory (Bardach and Kagan 1982/2002). As King (2006) and Fiorino (2006) note, this environment ultimately results in adversarial relations between regulators and the regulated community.

Yet, the well-intentioned command and control regulations and their successes are not without their criticisms. Fiorino (2006) outlines five key limitations of command and control regulation. First, these regulations impede innovation because they prescribe specific

environmental goals and processes to achieve these goals; there is little incentive to go beyond compliance with the regulations. Second, command and control regulations are inflexible, legalistic, and fragmented. Regulated companies have few, if any, incentives to try new methods of reducing their pollution levels because of a regulatory system built around rules that, if violated, will send a company to court faced with an assortment of charges and fines. A third limitation is that command and control regulations can be expensive. Specific technologies can be expensive, as can adopting particular production processes and recordkeeping. Fourth, command and control regulation is becoming increasingly irrelevant to many environmental problems and is therefore ineffective. The nature of environmental problems has changed dramatically in the last 30 plus years. Initially, the aim was simply to contain waste and other pollutants; now the focus is shifting to preventing pollution before it happens (Fiorino 2006, 81).

Finally, command and control regulations are challenging to implement – and not just for the regulated community. One of the underlying assumptions of command and control regulation was that government "knew it all" and could dictate environmental standards and means of achieving those standards; that has proven far from the case. Technology changes rapidly as do environmental challenges, and the time that it takes to pass legislation and promulgate regulations often cannot keep up with those changes. Such criticisms of first generation policies are widely noted and adoption of alternative strategies is frequently advocated (c.f. NAPA 1997; Davies and Mazurek 1997; Rondinelli 2001; Kettl 2002a,b; Durant, O'Leary and Fiorino 2004; Eisner 2006; Fiorino 2006).

Next-generation environmental policy refers to assorted policy tools that move beyond traditional

command and control techniques. Compared to command and control, next-generation environmental policies are cooperative not confrontational, comprehensive rather than fragmented, and flexible instead of rigid (Chertow and Esty 1997, 4). Since discussion of alternative policy tools is relatively new in environmental policy literature, much of it focuses on very specific examples of next-generation environmental policies instead of a general examination of these alternatives (c.f. Hockenstein, Stavins, and Whithead 1997; Stavins and Whitehead 1997; NAPA 1997; Wilbanks and Stern 2002).

Accordingly, continued movement towards these next-generation environmental policies will require increased discretion and flexibility for front-line regulators, and therefore professional accountability controls. And the greater flexibility afforded the regulated community in how they achieve prescribed environmental goals might diminish the role of more traditional, bureaucratic means of ensuring accountability, such as routine emissions monitoring data reports.[22] Undoubtedly, though, movement towards professional accountability will face much resistance, but that is an insufficient reason to retain the traditional way of ensuring accountability.

CONCLUSION

While these factors may explain why bureaucratic accountability dominates the work of environmental inspectors, this is not an adequate explanation for the continued pursuit of these measures, particularly when other means of accountability might be better aligned with

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[22] An argument could be made that bureaucratic accountability mechanisms need to remain in place to avoid agency capture and ensure regulators are not co-opted by the individuals they are trying to regulate; nevertheless, the topic leaves much room for debate (see Pautz 2010 for a more thorough discussion of next-generation policies and the implications for inspectors).

environmental protection objectives. Accountability is important and appropriate mechanisms must be in place to guard against capture and ensure service to the public, but an overreliance on bureaucratic accountability mechanisms can leave inspectors frustrated that protecting the health of the environment boils down to "compliance by computer." Without abandoning output measures and some traditional, bureaucratic means of ensuring accountability, professional accountability mechanisms could be advantageous for two reasons. First, professional accountability recognizes the significance of inspectors and their work and acknowledges the important role they play in protecting our environment. Professional accountability acknowledges the expertise of these front-line civil servants and appreciates their contributions and the importance of their work. Second, as we move toward next-generation environmental policies, bureaucratic accountability is increasingly difficult with policies that are more flexible and more reliant on outcomes. Therefore, as the policies evolve, so must accountability.

This exploratory research calls attention to a neglected area of study in environmental policy literature, regulatory literature, and accountability literature and there is much work that remains. A more comprehensive study of inspectors is needed, both in environmental policy and in other regulatory contexts. Larger samples with a more exhaustive set of questions would enable a more comprehensive study of accountability perceptions and preferences among regulators. Additionally, further study is needed of the different levels of government both domestically and internationally. Once a firmer foundation is established through interviews, other methodologies, such as survey research, could be employed to allow for greater generalizability claims.

Front-line workers – environmental inspectors in this case – are routinely overlooked.[23] Policy is made at the highest levels and dictated to the rest of the agency. Yet, front-line workers are responsible for the implementation of that policy and therefore its success or failure. It is important to recognize and appreciate their roles and consider their views on their work to better ensure policy implementation and outcomes.

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[23] Front-line workers in environmental policy seem to be cultivating some recent attention (c.f. Pautz 2009; Pautz and Schnitzer 2008; Scheberle 2004), yet much further and more comprehensive study is needed.

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