Vagueness, Credibility, and Government Policy

by Joseph G. Haubrich

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Introduction

Have more than thou showest,
Speak less than thou knowest,
Lend less than thou owest.

—William Shakespeare,
King Lear
(Act I, sc. iv, line 132)

Should the Federal Reserve — or any other government agency — make precise statements about its policy objectives? Determining the proper amount of secrecy in government generates controversy whether the agency involved undertakes espionage, banking, or monetary policy. Between the broad areas of agreement (classifying military strategies, publishing legislation) lie equally broad areas of contention.

This article explores the economic reasons why a government agency may find it in its own — and society's — interest to be vague about policy objectives. Circumstances arise in which it is optimal for agencies to release only partial information about their decisions. For that reason, vagueness, and the secrecy necessary to preserve it, represent an accommodation with an imperfect world rather than a conspiracy of silence.

Unlike complaints about the Central Intelligence Agency or the National Security Agency, the objections against banking and monetary authorities center not around a total lack of public announcements, but around the vagueness of their policy statements. This results from three related but separable policies: closed meetings, delayed release of decisions and minutes, and uninformative releases. Immediate release of a videotaped meeting may matter little if the policies agreed upon remain vague and imprecise, while a blacked-out, highly secret meeting could in principle result in detailed, precise statements of policy.

In the area of banking regulation, Irvine Sprague, a former director of the Federal Deposit Insurance Corporation (FDIC), described his ambiguity about announcing which banks were too big to fail: "Comptroller Todd Conover hinted that the eleven largest banks in the nation were immune from failure. In my Boston speech, I identified the top two as being absolutely safe. The right number is elusive."[1]

1 See Sprague (1986), p. 259.

Closure policy is not the only area where banking rules seem vague, nor do regulators have a monopoly on ambiguity. Regulatory enforcement of commercial lending standards — a serious concern during the last recession — has also been criticized for imprecision (McLemore [1991]). In the realm of monetary policy, Congressman Henry B. Gonzalez, former chairman of the House Banking Committee, has called for videotaping Federal Open Market Committee (FOMC) meetings and for the immediate release of monetary policy objectives. Outside the government, credit-rating agencies do not always announce precise standards for each rating (Hansell [1993]). More recently, both types of ambiguity have surfaced in the area of derivatives. There is apparently still some uncertainty about how regulators will treat bank investment in derivatives (Karr and Gaylord [1994]) and about what banks will tell their customers (Tomasula [1994]).

In this article, I explore the concept technically known as "cheap talk" as a simple economic reason for secrecy and vagueness. Cheap talk illustrates an incompatibility between precision and credibility in policy announcements and provides an economic explanation of why such announcements provide a limited, but still real, amount of information. The cheap-talk explanation for secrecy emphasizes the cooperative nature of the problem. In that respect, it differs greatly from the vagueness and secrecy of a lazy worker hiding from his boss or of a junta trying to keep its human rights violations from the press. Cheap talk presents an agency that wants to communicate, but that for reasons detailed below, cannot do so with perfect precision.

This article presents a simple example of points first raised by Stein (1989), along with an intuitive introduction to the economic theory of cheap talk. It then uses some recent advances to look at why Stein's arguments for secrecy may fail and why precise announcements would be useful.[2]

I. Cheap Talk and Communication

"Then you should say what you mean," the March Hare went on. "I do," Alice hastily replied; "at least — at least I mean what I say—"

—Lewis Carroll,
Alice's Adventures in Wonderland

Secrecy and vagueness describe aspects of communication. Consequently, any economic theory of secrecy and vagueness must address the economics of communication. The facet that appears most useful, and that I therefore concentrate on, is technically called cheap talk. Cheap talk refers to unverifiable messages that are costless to send and receive. This stands in contrast to "signaling," a better-known economic theory of communication that refers to messages which are both costly and verifiable.

Signaling builds on the intuition of "put your money where your mouth is." The economics of signaling, for instance, explain why a company will erect a costly headquarters to demonstrate its intent to stay around, or why skilled workers undertake the expense of a college education to distinguish themselves from less skilled workers. In each case — construction or education — the costly action serves notice of something important, such as dependability or quality. Every firm wishes to appear reliable, and every worker wishes to appear highly skilled. Those with a true advantage differentiate themselves by bearing the cost of signaling, which acts as a device to screen out less desirable types.[3]

Cheap talk, in contrast, arises when different types do not wish to appear the same and when there is no costly investment option. An example here would be the classified ads. Nothing prevents me from listing a piano for sale, but it serves no purpose if I really wish to sell my comic book collection. Likewise, a SBF (single black female) would most likely not list herself as a DJM (divorced Jewish male), though in principle she could.

More abstractly, the communication envisioned by cheap-talk theory involves a sender and a receiver. The sender has private information that matters to the receiver, who must choose an action. The outcome depends on both the sender's type (that is, the private information the sender has) and the action taken by the receiver. Thus, a receiver's action might be to visit my house with the intent to buy my comic book collection.

■ 2 Other authors have suggested different reasons for vagueness and secrecy. See Goodfriend (1986) and Kane (1980) for a more detailed examination of this issue.

■ 3 Signaling works, then, when its benefits outweigh its costs — but things don't always happen that way. Economists thus distinguish between "separating" equilibria, where different types split out, and "pooling" equilibria, where everyone acts the same. See Spence (1973).

TABLE 1

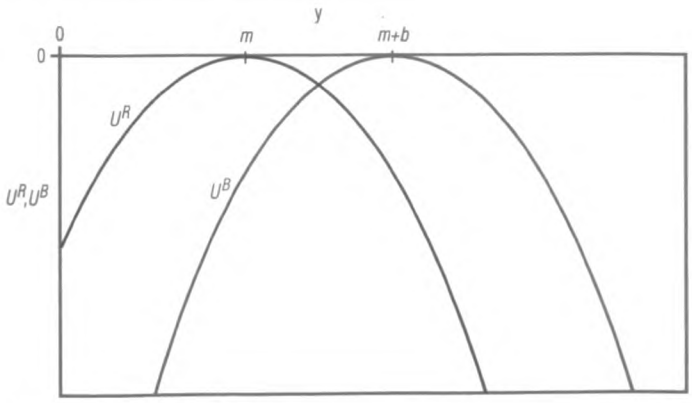
Coordination Game

Sender	Receiver: Action A	Action B	Action C
Type *a*	2,3	0,0	1,2
Type *b*	0,0	2,3	1,2

SOURCE: Adapted from Matthews, Okuno-Fujiwara, and Postlewaite (1991).

FIGURE 1

Utility Functions



SOURCE: Author's calculations.

The classified ad example pinpoints one big advantage of cheap talk: coordination. It wastes everyone's time if aspiring pianists, rather than *X-men* aficionados, come to my house. Likewise, agreeing on a place to meet if one gets separated from a group of friends at the mall gives another simple example of the advantages of cheap talk as coordination.

Table 1 describes the coordination role of cheap talk in the formalism of game theory. The sender may be type *a* or type *b*, while the receiver may take action A, B, or C. The first number of each pair denotes the payoff to the sender; the second is the payoff to the receiver. If the sender does not send a message about his type, the receiver takes action C, because the certain payoff of 2 beats the average of 1.5 from choosing A or B in ignorance. The sender, however, has an incentive to send a message — and to send the truth — because delivering the wrong message hurts the sender as well as the receiver. If a type *a* sender announces "I'm type *b*," then both the sender and receiver get zero.[4]

This sort of communication or coordination game has been justified here with rather homey examples of pianos, comic books, and malls, but it has a direct bearing on policy announcements. Consider a central bank that, for whatever reason (internal politics, the latest economic research), has a particular position on how much banks should rely on discount-window borrowing for short-term liquidity. An easy central bank would let banks borrow substantial amounts at short notice. Banks, if they knew this, would want to structure their loan portfolios to exploit this possibility. A tough central bank would discourage lending, and if banks were aware of that, they would not want to be caught short. In this case, it benefits the central bank to communicate its position to the banks — that is, to declare whether it is type *a* (easy) or type *b* (tough) in the game of figure 1.

To take another example, a regulator may look at low-capitalized financial institutions, such as savings and loans, and decide how it wants to deal with their risky investments. One type of regulator may prefer to prosecute management vigorously for undertaking what it deems to be inappropriate risks, while another type may view denying those investments as an unfair hardship on a well-run organization. Clearly, it matters to the thrift owners — and to their investment strategy — which position the regulator takes. Just as clearly, the regulator is much more likely to get its way by talking cheaply and revealing its type to the industry.

II. Secrecy and Vagueness: The Partition Equilibrium

Men use ... speech only to conceal their thoughts.

—Voltaire, *Dialogue 14, Le Chapon et la Poularde*

In the previous section, cheap talk served a coordinating role, being both credible and precise. Vagueness and secrecy had no place. This section describes a more subtle effect in which

4 Even in this simple example, things are not as straightforward as they seem. For example, another cheap-talk equilibrium exists in which the receiver ignores all messages, and hence the sender can report any arbitrary message. Game theorists accurately describe this as the babbling equilibrium, which points out another difficulty with cheap-talk games: They often have several equilibria, only one of which may have the desired properties. The example also leaves unspecified the language of the messages, whether verbal, code, or the number of lamps left in the tower of Boston's Old North Church. Readers interested in a deeper treatment of these issues should consult Matthews, Okuno-Fujiwara, and Postlewaite (1991).

precision and credibility conflict with each other, leading to secrecy and vague policy pronouncements.

The increased subtlety of this result also requires a more formal approach. Let the sender be the bank regulator and the receiver be a bank or the banking system. The regulator has a preferred risk level for banks that strikes some balance between safety and profitability and that takes into account the cost of a bailout. This preferred risk level, denoted m and distributed uniformly between 0 and 1, determines the sender's type, but is unknown to the bank. The bank, perhaps because it does not internalize the cost of the safety net provided by the regulator (or perhaps because it understands the risks better), prefers to undertake more risk. The regulators know the extent of this bias, denoted b. The bank must put together a loan portfolio with risk level y, also falling somewhere between 0 and 1.

The regulator's utility is

$$(1) \qquad U^R = -(y - m)^2.$$

The bank's utility is

$$(2) \qquad U^B = -(y - [m + b])^2$$

Figure 1 illustrates these functions. Reflecting the difference in preferred risk levels, equation (1) has a maximum at $y = m$, while equation (2) has a maximum at $y = m + b$. The bank and the regulator know each other's utility function.

Equations (1) and (2) embody several important assumptions. First, the interests of the regulator and the bank are not perfectly aligned. Nonetheless, the bank *does* care about what the regulator chooses, since a bank far from the regulator's preferred risk level may face increasingly intrusive regulation. In the terminology of Buser, Chen, and Kane (1981), the regulatory tax becomes more and more burdensome as the bank's risk deviates further from the regulator's preferred level. For example, although increasing risk may boost the bank's income, the higher regulatory taxes could mean that profits will drop.

Items falling under the regulator's discretion include the handling of branch and merger proposals, the extent and thoroughness of examinations, and, in extreme cases of failure, lawsuits or overly stringent regulation. Such procedures may mean the difference between current managers remaining in place during a reorganization, a new management team being brought in, or even prosecution for malfeasance. Making this problem nontrivial is the private nature of m. Only the government agency observes m, which reflects either the regulator's exact feelings, some bureaucratic/political outcome, or economic analysis based on confidential inputs, such as BOPEC or CAMEL ratings.[5] It is possible that this value changes over time, with new administrations and new appointments. Formally speaking, in the model presented here, the level of m is given to the government by such a process, rather than being freely chosen.

Equally important, the regulator wishes to communicate its m type — it doesn't just want to make all banks think that it is tough. For example, a regulator with a low m views banks investing a large share of deposits in safe T-bills as prudent. A regulator with a high m views such banks as lending too little. As Stein (1989) puts it, "Not all types want to create the same expectations" (p. 36). Hence, regulators want to let banks know the level of m.[6]

Now we are in a position to discuss secrecy and vagueness. We must proceed, however, in a way that may seem backwards. That is, we start with the answer and then show that it works. Specifically, a particular type of vagueness, announcing a range of m rather than a specific value, solves the credibility problem. In game-theoretic terminology, we conjecture an equilibrium and show our conjecture to be correct. Though economically and logically precise, this approach is unsatisfying — a bit like knowing that 17 x 17 is 289 without knowing how to extract square roots.

With these preliminaries out of the way, we can understand how vagueness and secrecy play a role. Suppose, as in the earlier examples, that the regulator notices the coordination aspect of the problem and announces m. The bank, however, believes that a slightly higher risk level is appropriate and, knowing m, chooses a risk of $y = m + b$. The regulator doesn't like this, so instead of announcing m, it announces $m - b$, figuring that when the bank increases its risk above the announced m, it will return to the risk level most preferred by the regulator. But the bank isn't stupid. It knows that the regulator wants to understate

■ **5** BOPEC ratings apply to bank holding companies, while CAMEL ratings apply to banks. Both are confidential assessments of these institutions' health filed by their regulators. See Spong (1990) for additional details.

■ **6** In Stein's model of monetary policy, some distortion (caused either by the government or by a market imperfection) means that the monetary authority wishes to fool people and drive down the unemployment rate. The imperfect correlation of interests thus takes a slightly different form than in this paper.

m, so it overstates y even more. Understanding this, the regulator wants to understate m further yet, meaning that the bank adjusts risk y up even more, meaning that the regulator .... Obviously, credibly communicating m proves impossible. Because the regulator has an incentive to manipulate banks' expectations, it cannot credibly and precisely announce its preferred risk level. Divergent interests make this impossible.[7]

Banks and regulators have similar, but not identical, interests. This makes communication desirable, but precise announcements useless. On the other hand, it makes imprecise — or vague — announcements useful. Suppose that instead of announcing that the preferred risk for banks is $m = 0.57721$, the regulator simply announces whether its preferred risk is high, medium, or low. Because interests are not identical, the regulator wants to manipulate banks' expectations. However, because interests are similar, a regulator with a high preferred risk (large m) will not manipulate expectations too far. It will not want to tell banks that its preferred risk is in the low category, since the difference is just too large. With only three choices, the coordination side of communication becomes more important than the manipulation side. The regulator in effect commits itself to not telling little white lies — only big lies are possible. And while the regulator wishes that its hard-charging loan machine would take a little less risk, it really doesn't want the bank to become a conservative bond investor.

More formally, consider the regulator announcing a "partition" of three intervals $[0, a_1]$, $[a_1, a_2]$, and $[a_2, 1]$. (For completeness, I define the first and last terms as $a_0 = 0$ and $a_3 = 1$.) Whenever m falls between 0 and a_1, the regulator announces that it favors low risk, or that m is in the interval $[0, a_1]$.

For any such announcement, the bank, knowing m has a uniform distribution, makes a best guess of it as $\frac{a_i + a_{i+1}}{2}$ and consequently chooses its risk level as

$$(3) \qquad y = \frac{a_i + a_{i+1}}{2} + b.$$ [8]

The bank pushes up its risk level by b from its best guess of the regulator's true m. For example, whenever m falls between 0 and a_1, the bank sets

$$y = \frac{a_1}{2} + b.$$

In order to show that this vagueness tactic actually works, we need to be more specific and calculate the a_i's, or the boundaries for each region. It must be true that if m falls in the interval $[a_i, a_{i+1}]$, the regulator prefers to announce that particular interval rather than any other.

At the boundaries, an arbitrage condition holds: The regulator, with a target risk level of $m = a_i$, must be indifferent between announcing interval $[a_{i-1}, a_i]$ or $[a_i, a_{i+1}]$. From equations (1) and (3), this condition becomes

$$(4) \qquad -\left(\frac{a_i + a_{i+1}}{2} + b - a_i\right)^2 = -\left(\frac{a_{i-1} + a_i}{2} + b - a_i\right)^2.$$

Equation (4) reduces to a difference equation having the form $a_{i+1} = 2a_i - a_{i-1} - 4b$, subject to $a_0 = 0$ and $a_3 = 1$.

Standard methods exist to solve such difference equations (see Goldberg [1958]), and using them delivers the results

$$a_1 = \frac{1}{3} + 4b \text{ and}$$

$$a_2 = \frac{2}{3} + 4b.$$

If we set $b = \frac{1}{24}$, then the three intervals (or partitions) become low = $[0, \frac{1}{2}]$, medium = $[\frac{1}{2}, \frac{5}{6}]$, and high = $[\frac{5}{6}, 1]$. Notice the asymmetry in this partition equilibrium. The intervals are not all the same size, meaning that the regulator can be more precise when its preferred risk level exceeds the mean (that is, when $m > \frac{1}{2}$). Because the bank tends to set risk above what the regulator prefers, the regulator can use the natural endpoint, $m = 1$, to create a more precise announcement. The result is that announcements will be vaguer and secrecy will be higher when the regulator's risk is relatively low.

These numbers make the example particularly simple, but the main points carry through in general. The number and size of the partitions may vary as the exact trade-off between coordination and manipulation changes. Thus, partitions remain, as does the asymmetry between them.

To summarize, the regulator wishes to communicate its preferred risk level to the bank. The gaming caused by the bank desiring more

■ 7 This scenario assumes that the interaction is a one-shot game. Considering repeated interactions between the bank and the regulator may lead to different results, but only, as Stein (1989) notes, under very strong assumptions.

■ 8 This analysis closely follows Crawford and Sobel (1982). Banks choose y to maximize their expected utility, given by equation (2).

risk than does the regulator means that any precise announcement will not be credible. The partition equilibrium, on the other hand, delivers a credible announcement that is not precise.

III. Small Lies and Small Banks

Striving to better, oft we mar what's well.
—William Shakespeare, *King Lear* (Act I, sc. iv, line 371)

The partition equilibrium provides an intuitive justification for secrecy and vagueness. It represents a way to communicate credibly when interests are similar but not identical. A closer look at the reasoning involved, however, casts some doubt on the general applicability of the results. Because an exacting analysis of the criticisms would involve some highly technical aspects inappropriate for an *Economic Review,* this section concentrates on economic intuition instead.

The first problem concerns how the regulator (sender) tries to influence the receiver. In the partition example, if the regulator announces that it prefers medium risk, the bank guesses that $m=\frac{2}{3}$ (because $\frac{1}{2}[\frac{1}{2}+\frac{5}{6}]=\frac{2}{3}$) and chooses a risk level of $y=\frac{2}{3}+\frac{1}{24}=\frac{17}{24}$. This response may tempt the regulator into announcing a "revised" message of "m is in the interval $(\frac{5}{12},\frac{5}{6})$." If the bank reasons as before, this will lead to a risk level of $y=\frac{16}{24}$.

The bank may not reason as before, however. The original partition equilibrium defined the ranges, but what if the sender changes the announced range? What does the bank believe when the regulator does something unexpected? This puts the economist in the uncomfortable position of playing psychologist. It also makes the ultimate result somewhat uncertain. For example, if the bank recognizes what the regulator is doing with the revised announcement, it will shade its choice of y somewhat higher, the regulator will shade the interval lower, and the partition equilibrium will break down. As the originator of this critique explains, "The cheap-talk equilibrium breaks down entirely if small differences in government announcements can cause only small differences in public expectations" (Conlon [1994], p. 420).

An unexpected announcement can have various consequences.[9] When the regulator announces that m is in the interval $(\frac{5}{12},\frac{5}{6})$, the bank may believe, "Things are totally fouled up. We'd better assume that $m=\frac{1}{2}$." Such a belief will once again allow the partition equilibrium to exist. That is, the regulator realizes that any deviation from the standard announcement could lead to an undesirably large change in bank expectations. In this case, because the bank becomes too conservative, it would be better for the regulator to stay with its original three announcements.

Another critical assumption is that the regulator faces only one bank, or a completely homogeneous banking system that acts like one bank. If, instead, many banks each have different preferred risk levels (b_i's), problems can once again arise. In this case, if the regulator makes an unexpected announcement, the average of the potentially different responses may lead to a smooth response. Any big shifts get averaged out, and the equilibrium again unravels.[10]

Put another way, with a large audience, the sender has an incentive to "fine tune" the average audience reaction. This leads receivers to attempt to offset the anticipated fine tuning, and communication breaks down.

IV. Conclusion

He was a power politically fer years, but he never got prominent enough t' have his speeches garbled.
—Abe Martin, *Abe Martin's Sayings and Sketches*

How much detail a government should communicate to its citizens remains controversial, especially in the areas of money and banking. On many issues, the government communicates to foster coordination with the public. There are simply some things it is useful for citizens to know, and the government tells them. In other cases where interests may not align exactly, communication cannot always be both precise and credible. Vagueness and secrecy present one way around the problem by allowing partial communication.

The conflict between credibility and precision suggests that pressuring an agency to release information may not always be productive. Releasing bank regulators' meeting notes or

9 This is the problem of multiple equilibria, mentioned in footnote 4.

10 See Conlon (1992). The detailed argument is quite complex.

videotaping FOMC deliberations will most likely result in reports and videotapes displaying the lamented vagueness of current official releases. The partition equilibrium remains the optimal solution to the problem facing the government and the public; videotaping will not change the trade-off between vagueness and credibility.

Pressure may result in truthful, precise announcements if it leads to an appropriate change in institutional structure. The change must somehow further align the interests of the two parties or introduce a credible commitment mechanism. Less drastic changes, perhaps occurring as agencies come to grips with the trade-offs involved, may alter the amount of information released. The FOMC's recent policy announcements are a case in point.[11]

These conclusions should be treated with a healthy skepticism, however. As we have seen, further examination of the economic issues reveals that the benefits of vagueness may be sensitive to particular modeling assumptions. Cheap talk represents an intriguing, but not entirely compelling, justification for imprecise policy announcements.

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■ **11** In the first quarter of 1995, the Federal Reserve adopted a policy of announcing changes in the stance of monetary policy the day they are made. For details, see Federal Reserve Bank of Cleveland (1995).