

Precision's Counterfeit: The Failures of Complex Documents, and Some Suggested Remedies

By Howard Darmstadter*

Contracts and other transaction documents are frequently said to be complex and difficult to read in order to avoid ambiguity and mistakes. I argue that such complexity has not solved these problems, and may have exacerbated them. Moreover, the problems are likely more widespread than generally appreciated. I examine some typical provisions of a revolving credit agreement that seem secure but that on closer examination (as might be given in litigation) contain potentially serious ambiguities and mistakes. These problems are not isolated instances of bad drafting but symptoms of a systemic problem. I suggest some partial remedies, some simple to implement but others requiring a more radical rethinking as to how a document should work.

The heyday of securitization has passed, or at least been interrupted. But for a time, wherever there was a payment obligation, it seemed that there was also an investment banker bent on packaging and securitizing it. Increasingly complex structures were devised to tailor the product more closely to the needs of particular investors while conforming to complex regulatory and tax requirements.¹

These complex structures called for complex documents. In particular, legal drafters had to track convoluted cash flows: Funds would run up and down through numerous accounts, subject to complicated conditions and a plethora of upper and lower numerical limits.² The challenge was qualitatively familiar—a firm grasp of arithmetical relationships is often needed in legal drafting—but of an unprecedented scale and intricacy.

How well did legal drafters meet these challenges? In particular, were the documents easily comprehensible? Unambiguous? Arithmetically accurate?

This isn't a mystery novel, so I'll give you the answers right now: The documents were almost comically incomprehensible, frequently ambiguous, and occasionally produced the wrong numbers.

The first answer should surprise no one. Given the complexity of the structures, the documents were always going to be a hard read. But an *impossible*

* Currently consults on documentation issues and teaches drafting as an adjunct professor at the Benjamin N. Cardozo School of Law.

1. See the "Methodological Postscript" below regarding the basis for this and other statements about documentation practices.

2. See the diagram in "What Is to Be Done?—Diagrams" below and in the unpublished work mentioned in the text accompanying note 3.

read? It is not clear that anyone, including their drafters, fully understood those documents.

The second and third answer will, however, surprise many people familiar with securitizations. They certainly surprised me. Like most lawyers, I had originally assumed that there was a trade-off between simplicity and accuracy—that these documents were so reader-hostile *because* they were accurate and unambiguous.

In 2002 I wrote a paper, which I chose not to publish, questioning these assumptions as applied to credit card securitization documentation.³ Nonetheless, I remained confident that the difficulties with securitization documentation were limited to that genre, and that however turgid the typical complex legal document might be, it was at least likely to be generally free of ambiguity and inaccuracy.

Then, in 2008 I began teaching a drafting course at a local law school. As an example for my class, I used a syndicated revolving credit agreement (a *revolver* in the biz) drafted by one of New York City's leading firms. It was a document I was intimately familiar with, having reviewed versions as counsel for the borrower on a nearly annual basis over some fifteen years. I knew the partner and many of the associates involved in the drafting, and continue to think of them as among the most capable lawyers of a highly talented legal community. The revolver was drafted in the typical ornate legal style that my business clients, and later my students, found so frustrating, but I was confident that it was a document that worked. After all, much of the document was in the firm's standard form, and had no doubt been pored over by many of the firm's lawyers and by lenders' and borrowers' counsel in numerous transactions. As such, it might be thought to be a repository of the accumulated wisdom of many years and many deals.

PROBLEMS IN THE POND

I assigned my students portions of the revolver to simplify, and redrafted a few sections myself as examples. In redrafting, I thought merely to skim off some of the surface algae. But when I did, and looked into the now crystalline waters of the pond, I saw . . . sharks.

Here is the first section I tackled,⁴ which is also the first section in the revolver after the definitions:

Commitments. Subject to the terms and conditions and relying upon the representations and warranties herein set forth, each Lender agrees, severally and not jointly, to make Loans to the Borrower, at any time and from time to time on and after the date hereof and until the earlier of the Maturity Date and the termination of the Commitment of such Lender, in an aggregate principal amount at any time outstanding not to exceed such Lender's Commitment, subject, however, to the conditions that

(i) at no time shall the sum of the outstanding aggregate principal amount of all Loans made by all Lenders exceed the Total Commitments, and

3. I shall be happy to supply a draft to the curious. Readers may contact me at darmstade@yahoo.com. Portions of that earlier effort appear here.

4. I have removed some complications in the exemplified sections that are not germane to my argument.

(ii) at all times the outstanding aggregate principal amount of all Loans made by each Lender shall equal the product of the percentage which its Commitment represents of the Total Commitments times the outstanding aggregate principal amount of all Loans.

This is the key section of the agreement because it states the lenders'⁵ commitment to lend to the borrower: ". . . each Lender agrees . . . to make Loans to the Borrower" Of course, as is regrettably customary in these matters, this key statement only begins at the 17th word of a 200-word sentence.⁶ By breaking off some of the protuberances into separate sentences ("Such obligation of the Lenders shall be several and not joint") we can make the remaining sentence easier to follow.⁷

Some of the verbiage can be eliminated altogether. The lenders' commitments are subject to certain conditions that are set out later in the agreement, but is it really necessary to begin with "Subject to the terms and conditions and relying upon the representations and warranties herein set forth"? The conditions article (not quoted here) states that the loans are subject to stated conditions, and it seems obvious that everything in the agreement is subject to everything else—that is, that the agreement is to be read a whole. If that isn't the understanding, do we have to stick "subject to the terms and conditions" in front of every sentence in the document? Or should we add a sentence in the "Miscellaneous" article stating that "This agreement is to be read as a whole"? Or are we just being silly?⁸

A more interesting question involves the key phrase itself—"each Lender agrees to." The whole revolver is an agreement between the parties (after the recitals, the rest of the revolver is prefaced by "Accordingly, the Borrower, the Lenders, and the Administrative Agent agree as follows:"), so it should be enough to say, as is usually said in the agreement, that "each Lender shall . . ." Indeed, if "each Lender [or the Borrower] agrees to . . ." is used from time to time, is there an implication that statements that the lender or borrower "shall" do something are not part of the agreement?

Once these changes are made, the main problem of the sentence may be seen more clearly. The obligations of the lenders to make loans to the borrower are stated to be subject to the condition (stated in clause (ii) of the sentence) that the principal amounts of the loans will be allocated among the lenders in proportion to their commitments (that is, the principal amount that each lender has committed to lend). I shall refer to this as the *proportionality condition*.⁹

5. In the revolver, defined terms such as "Lender" have initial caps. I have retained the initial caps when quoting the revolver, but dropped them in the discussion.

6. This is the case in the original; the simplified version given here is a mere 150 words.

7. The points made here and in the two following paragraphs may seem mere stylistic fussiness. However, one of the points of this article is that a complicated style may hide substantive problems from both drafters and readers.

8. Of course it will be important in particular cases to establish that sentence A takes precedence over sentence B by the usual devices of "Subject to [sentence A], . . ." and "Notwithstanding [sentence B], . . ." This is not one of those cases.

9. In the revolver, a "Loan" is made by a single lender, with all the Loans made at one time by all the lenders being a "Borrowing."

As an illustration, suppose we have three lenders. Lender A commits to lend \$50 million, and lenders B and C each commit to lend \$25 million. Then the total commitment is \$100 million. Then in any borrowing, the principal amount of A's loans will be 50 percent, and the principal amount of B's and C's loans will each be 25 percent, of the principal amount of the borrowing. So if the borrower requests a borrowing of the full \$100 million that the lenders have committed, A's loan will be \$50 million (that is, 50 percent of the borrowing) and B's and C's loans will each be \$25 million (25 percent of the borrowing).

The proportionality condition is, or is the outcome of procedures, stated elsewhere in the agreement, and thus redundant. But there is a more troubling problem: The proportionality condition requires that the principal amount of the loans made by lender A in our example be 50 percent of the total principal amount of all loans, which will generally be the case. But what happens if lender C fails to fund? That is, suppose once more that the borrower requests a borrowing of the full \$100 million total commitment, that A funds its full \$50 million and B its full \$25 million, but that C does not fund.¹⁰ If the borrower receives the \$75 million provided by A and B, then the ratio of A's loans to total loans will not be 50 percent, but 66.67 percent (that is, \$50 million divided by \$75 million) and the ratio for B will not be 25 percent, but 33.33 percent (\$25 million divided by \$75 million). Can A and B successfully argue that since C will not make its loan, the condition stated in clause (ii) cannot be satisfied, and that therefore they do not have to make their loans? In a syndicated revolving credit facility with sixty lenders, no borrower would want to face the possibility that a breach by a single lender of its funding commitment would undo the commitments of all the other lenders.

Fortunately, the next section gets it right:

Each Loan shall be made as part of a Borrowing consisting of Loans made by the Lenders ratably in accordance with their Commitments; provided, however, that the failure of any Lender to make any Loan shall not in itself relieve any other Lender of its obligation to lend hereunder (it being understood, however, that no Lender shall be responsible for the failure of any other Lender to make any Loan required to be made by such other Lender).

Taken by itself, this section says that if, in our example, C fails to fund, then A and B must still fund in the ratio of their commitments, that is 50:25, or 2:1, or in the specific case, \$50 million to \$25 million. The problem is that this statement and clause (ii) contradict each other; if lender C fails to fund, the condition in clause (ii) cannot be satisfied and therefore lenders A and B are arguably relieved from their obligations to fund, whereas the following section would require A to lend \$50 million and B to lend \$25 million even if C fails to fund. Moreover, there is no express statement in the agreement as to which provision is to control.¹¹

10. Where this is just a timing glitch, the lead lender will usually provide the funds until the laggard bank can fund. But here I'm supposing that lender C is not going to fund at all—it's broke, perceives that the borrower is incapable of repaying, is prevented from funding by state action, etc.

11. It might be thought that the introductory "Subject to the terms and conditions . . ." language in the first section indicates that it is to yield to the second. However, it is not clear whether such

Of course, in the real world this will generally not cause any problems. Borrowers and lenders are generally honest people who have enjoyed mutually advantageous business relations before and hope that those relations will continue. Experienced hands will know that it is the first statement of the proportionality condition that is at fault, and that if lender C refuses to fund, the borrower can generally be assured that it will at least receive the \$75 million promised by A and B.

But on rare occasions, when the vicissitudes of business life make it unlikely that the advantageous relationships will continue, contracting parties may decide to insist on obscure readings of the documents, and we are off to court. There, the rights and obligations of the parties will be decided by a judge who is unlikely to be familiar with revolver documentation or expectations and primed to distrust both sets of counsel. While experienced hands will know the correct answer (and parol evidence may be introduced to resolve the ambiguity), the judge is unlikely to be an experienced hand.

The reason usually given for the standard style of complex documents is that it avoids ambiguity. Someday, we are lectured, the document might be in front of a judge, and at that point it is essential that the document be susceptible of only one correct reading. But here we see that the drafting style has led to an ambiguity that might lead to a disastrous (for the borrower) misreading.

Perhaps the inadequacy of the proportionality condition is not a matter of style, but just an isolated, though lamentable, example of bad drafting.¹² Before considering that possibility, let's take a look at the second section I assigned my class:

Change in Circumstances. If any Lender shall give notice to the Administrative Agent and the Borrower at any time to the effect that Eurocurrency Reserve Requirements are, or are scheduled to become, effective and that such Lender is or will be generally subject to such Eurocurrency Reserve Requirements as a result of which such Lender will incur additional costs, then such Lender shall, for each day from the later of the date of such notice and the date on which such Eurocurrency Reserve Requirements become effective, be entitled to additional interest on each Eurodollar Loan made by it at a rate per annum determined for such day equal to the remainder obtained by subtracting (i) LIBOR for such Eurodollar Loan from (ii) the rate obtained by dividing such LIBOR by a percentage equal to 100% minus the then-applicable Eurocurrency Reserve Requirements. Any Lender which gives a notice under this section shall promptly withdraw such notice (by written notice of withdrawal given to the Administrative Agent and the Borrower) in the event Eurocurrency

introductory language was meant to run as far as the conditions contained in clauses (i) and (ii) at the sentence's end. For one thing, clauses (i) and (ii) are themselves stated to be conditions, so the logic (not to mention the grammar) would be tangled. Moreover, while the lenders might now wish such language to run to clause (ii) (the proportionality condition), it is unlikely that they would want it to run to clause (i), which states that the aggregate principal amount of all the lenders' loans must never exceed their aggregate commitments.

12. "I don't think it's quite fair to condemn the whole program because of a single slip-up." George C. Scott, as Gen. "Buck" Turgidson, in the movie *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb*, Stanley Kubrick, director; screenplay by Kubrick, Terry Southern, and Peter George (1964).

Reserve Requirements cease to apply to it or the circumstances giving rise to such notice otherwise cease to exist.

A brief explanation of the reasoning behind the section: Under the agreement, if the borrower requests a \$100 million eurodollar borrowing with a three-month interest period, the borrower's annual interest rate will be the London interbank offering rate ("LIBOR") for three-month deposits, plus a specified percentage margin. Using our example, lender A will lend \$50 million to the borrower and will receive interest at an annual rate of three-month LIBOR plus the margin. (If the loan is still outstanding at three months, the interest rate will be reset according to procedures described in the revolver.) The document is structured on the hypothesis that A will "match fund"; that is, A will have its London branch buy a three-month deposit of U.S. dollars (a "eurodollar deposit") in the London market at the going rate—three-month LIBOR—and lend the deposited dollars on to the borrower at that rate plus the margin. The margin will represent A's gross profit.¹³ Similarly for the other lenders.

Match-funding works, however, only if A can lend the entire \$50 million deposit on to the borrower. This is not possible in the domestic context. In the United States, if a lender takes in a \$50 million deposit, it will have to deposit part of the \$50 million with a Federal Reserve Bank as a reserve. For example, if the reserve percentage is 10 percent, and lender A is to make a \$50 million loan, then Lender A will have to take in approximately \$55.56 million in deposits in the United States to fund the \$50 million loan; the other \$5.56 million will have to be deposited with the Fed. Lender A will thus end up paying interest on \$55.56 million in deposits while only earning interest on \$50 million of loans, a situation that will decrease, or even totally destroy, its profit margin.¹⁴

At present, the Fed does not require reserves against eurodollar deposits. But at one time the Fed did require the foreign branches of U.S. banks to post such reserves.¹⁵ The change-in-circumstances section of the revolver attempts to deal with a reimposition of such requirements. It proposes to do this by, effectively, raising the LIBOR portion of the interest payments on the loan to the amount that would be paid if the borrower had borrowed the amount of the eurodollar deposit; in our example, instead of paying three-month LIBOR plus a margin on \$50 million, the borrower would receive a \$50 million loan but pay the equivalent of three-month LIBOR on the full \$55.56 million of the eurodollar deposit (plus the margin on the \$50 million loan). Anyway, that's the idea; let's look at the implementation.

13. The lenders are not obligated under the agreement to match fund, and may obtain the funds for the loans in any way they wish. But the match-funding mechanics assure the lenders of a profit on the transaction if they do match fund.

14. Well after the change-in-circumstances section was drafted, the Fed began paying interest on reserve deposits. See *infra* note 19 and accompanying text.

15. These requirements were eliminated in 1990. Scott E. Hein & Jonathan D. Stewart, *Reserve Requirements: A Modern Perspective*, FED. RES. BANK ATLANTA ECON. REV., Fourth Quarter 2002, at 41, 46.

The change-in-circumstances section works by requiring the borrower to pay additional interest on its loan if eurocurrency reserve requirements are implemented. In terms of our example, the additional interest on the loan from lender A will be the difference between the interest to be paid (at an annual rate equal to three-month LIBOR plus the margin) on the \$50 million loan, and interest at the same rate that would be paid on a \$55.56 million loan. This can be done by multiplying LIBOR for the \$50 million loan by $55.56/50$ and then subtracting LIBOR. The remainder is the rate that, applied to the \$50 million loan, gives the additional interest. Generalized in the revolver, this formula becomes:

$$\text{Additional interest rate} = [L / (100\% - \text{ERR})] - L$$

where L = LIBOR for the eurodollar loan and ERR = the eurocurrency reserve requirements. Trust me, the arithmetic works. The equation captures the verbal formulation in the agreement for “additional interest on each Eurodollar Loan made by [the Lender] at a rate per annum determined for such day equal to the remainder obtained by subtracting (i) LIBOR for such Eurodollar Loan from (ii) the rate obtained by dividing such LIBOR by a percentage equal to 100% minus the then-applicable Eurocurrency Reserve Requirements.”

Well, almost. The “minus” in the verbal formulation could be read to apply to the fraction (LIBOR over 100 percent) rather than applying to 100 percent alone. That is, the verbal formulation could be read to give the equation

$$\text{Additional interest rate} = [(L / 100\%) - \text{ERR}] - L$$

which does not generally give the same amount of additional interest. (The difference is in the placement of the parentheses; in the first formula they enclose “100% – ERR,” while in the second the parentheses enclose “ $L / 100\%$.”)

Now, no one would take the second equation to be what was intended, because dividing L by 100 percent is the same as dividing by one, which just leaves L . Moreover, we know that the second equation does not serve the intended purpose. But we’re not supposed to be depending on happenstance—the formula required 100 percent rather than some other percentage—or on our foreknowledge of the drafters’ intentions.

So there is a slight misstep in the expression of the formula, but it is hardly serious, at least in this case. But we are not through. There are more serious problems with the section.

The section states that “such Lender *shall . . . be entitled* to additional interest on each Eurodollar Loan made by it at a rate per annum” (emphasis added). Agreements often use the language of obligations, rights, and entitlements—“the Borrower shall [be obligated / have the right / be entitled] to”—rather than the more direct “the Borrower [shall / may].” Normally this is unproblematic, but there is a particular problem with “is entitled to” when it refers not to something a party may *do*, but to something a party may *receive*—in the present case, additional interest. Where someone is entitled to receive something, this phrasing allows the writer to say it without identifying who is to provide that something. And, sure

enough, the change-in-circumstances section never says who is to provide the additional interest.

The problem with entitlement language is much like the problem with using the passive voice. English style books often caution us to avoid the passive voice.¹⁶ The passive has an honorable place in English prose, but its use in legal documents is fraught with danger.¹⁷

In the present case, the use of entitlement language masks the failure to designate the borrower as the party to pay the interest. Of course, we all know that it has to be the borrower, and not the other lenders, the administrative agent, or a fund set up for such eventualities. But that is not what this style of drafting promised. Supposedly, we could rely solely on the wording of the document, without recourse to testimony of the parties as to what the document intended.

There is worse to come. Paraphrasing somewhat, the section's first sentence provides, among other things, that the Lender will be entitled to additional interest from the later of:

- (a) the date it notifies the borrower that the lender is or will be subject to eurocurrency reserve requirements that cause the lender to incur additional costs; and
- (b) the date on which the reserve requirements become effective.

The last sentence of the change-in-circumstances section requires the lender to withdraw the notice if the lender ceases to be subject to eurocurrency reserve requirements or such requirements no longer cause the lender to incur additional costs. But the agreement does not say what it means to "withdraw" a notice, nor does it say that upon receipt of the notice, the borrower can stop paying additional interest. Of course, if eurocurrency reserve requirements cease to apply to the lender, the formula for the additional interest will work out to \$0. But what if eurocurrency reserve requirements continue to apply but do not cause the lender to incur additional costs? For example, suppose that the requirement is for reserves of 10 percent against deposits of less than three months. Then, on the match-funding assumption, the lender should not incur additional costs for loans having an interest period of three months or more.

All of which should alert us to another problem: While the section allows the lender to receive additional interest only if the eurocurrency requirements cause it to incur additional costs, these costs are not tied to the borrower's loans. This may not be entirely a drafting oversight; it may be difficult for a lender to precisely calculate the cost impact of a reserve requirement on a particular loan, and so the drafters (who work for the lenders) may have opted to leave the connection vague. Still, it should have been easy to give the costs at least a rough mooring to the loans (additions in *italics*):

16. See, e.g., WILLIAM STRUNK JR. & E.B. WHITE, *THE ELEMENTS OF STYLE* 18–19 (3d ed. 1979).

17. See CHARLES M. FOX, *WORKING WITH CONTRACTS: WHAT LAW SCHOOL DOESN'T TEACH YOU* 75–76 (2002).

If any Lender shall give notice to the Administrative Agent and the Borrower at any time to the effect that Eurocurrency Reserve Requirements are, or are scheduled to become, effective and that such Lender is or will be generally subject to such Eurocurrency Reserve Requirements as a result of which such Lender will incur additional costs *with respect to a Eurodollar Loan made by it*, then such Lender shall, for each day from the later of the date of such notice and the date on which such Eurocurrency Reserve Requirements become effective, be entitled to additional interest on such Eurodollar Loan at a rate per annum determined for such day equal to the remainder obtained by subtracting (i) LIBOR for such Eurodollar Loan from (ii) the rate obtained by dividing such LIBOR by a percentage equal to 100% minus the then-applicable Eurocurrency Reserve Requirements. *The determination whether Eurocurrency Reserve Requirements result in additional costs for a Eurodollar Loan shall be made by the Lender [in its reasonable discretion] [and shall be conclusive, absent manifest error].*¹⁸

Sadly, we're not done. There is another large (and for the borrower, expensive) problem lurking in the change-in-circumstances section. The formula for calculating the additional interest neglected one possibility that has now come to pass: The formula ignores any interest that might be paid on eurocurrency reserves.¹⁹ Since the Federal Reserve Banks are now paying interest on domestic reserves, it seems likely that any implementation of eurocurrency reserve requirements would also provide for interest on those deposits. So the formula for additional interest on eurodollar loans would likely overcompensate the lenders.

It is hard to fault the drafters for not thinking about the possibility of interest being paid on reserves. But it might have been helpful if the revolver explained that the purpose of the additional interest formula was to compensate for interest losses that might be caused by reserve requirements.²⁰

One final uncertainty about the section: Suppose the margin for eurodollar loans is 0.5 percent and that the eurodollar reserve requirement is 10 percent. Then for a \$50 million loan, the section (on the most natural reading) would require the borrower to pay LIBOR on the full \$55.56 million that Lender A would have to borrow to fund the loan on the match-funding hypothesis. But the borrower would be required to pay the 0.5 percent margin only on the \$50 million it actually borrowed. The lender will earn nothing on the additional \$5.56 million it had to borrow—it will pay LIBOR to borrow the \$5.56 million and receive LIBOR on that amount from the borrower. There is no way to tell from the agreement whether this result was intended.

18. I am not proposing this particular wording, merely offering a rough cut of how the problem might be approached.

19. When the revolver was drafted, reserves did not earn interest. The Financial Services Regulatory Relief Act of 2006 authorized the Fed to pay interest on reserves beginning October 1, 2011, and the Emergency Economic Stabilization Act of 2008 accelerated that date to October 1, 2008. On October 6, 2008, the Fed announced that it had amended its Regulation D to provide that commencing with the maintenance period beginning October 9, 2008, the Reserve Banks would pay interest on required reserve balances at a rate 10 basis points below the average targeted federal funds rate for the maintenance period, and on excess balances at a rate 75 basis points below the lowest targeted federal funds rate during the maintenance period.

20. I discuss failures to explain the purposes of provisions more extensively below in "What Is to Be Done—Explanations."

WHAT IS TO BE DONE?

SOME SIMPLE DRAFTING MAXIMS

Two examples from one agreement do not constitute a survey.²¹ But they should give us pause. I did not pick out the revolver or the particular sections to demonstrate drafting flaws, but because I initially thought them to be relatively bullet-proof examples of a high-quality, though somewhat ornately drafted, document. The collapse of that assumption at the slightest touch was unexpected. Are there lessons to be learned here that go beyond the correction of particular isolated mistakes? Let us go through the particular problems, in roughly the order discussed above, and see if we can glean any general lessons.

The major problem in the commitments section was that it could be read to condition each lender's individual obligation to make its loans on all of the other lenders fulfilling their obligations to make loans; if any lender failed to make its loan, the proportionality condition could not be satisfied.

In the original section, the problematic clause formed the last twenty-seven words of a 200-word sentence. As noted earlier, it would have been a simple matter to break the sentence down into more manageable portions, and perhaps this would have helped expose the problem. So our first maxim could be:

- *Don't try to pack everything into a single sentence.*

Also, as noted earlier, the particular clause was not necessary. The next section stated the rule in the correct form. Thus, there was nothing to be gained from repeating the point. Moreover, when you attempt to say the same thing twice, there is always a chance that you will end up saying two somewhat different things. But more than that, there is at least a possibility that the parties missed some of the implications of the incorrectly stated condition *because* they assumed it had to mean the same as the more accurate statement a few lines further on. In other words, repetition may invite careless reading. So the second maxim is:

- *You should have a good reason for saying anything more than once.*

In the change-in-circumstances section, one problem was that the statement that a lender would be "entitled to additional interest" left it unclear who was to pay the additional interest. The problem was caused by a general tendency to occasionally use the locutions that a party "agrees to," "has the right to," "is entitled to," or "is obligated to" do something rather than the more straightforward statements that the party "shall" or "may" do something. Where the entitlement is to receive a something rather than to perform an action, it's easy to neglect to say who is to provide that certain *quelque chose*. This tendency is also shared with constructions in the passive voice. So our next two maxims are:

- *Use "shall" and "may" rather than "agrees to," "is obligated to," "has the right to," "is entitled to," etc.*
- *Use the active voice.*

21. Nor do three, but the third section I assigned my students also contained an unexpected ambiguity, which I won't burden you with here.

The remaining problems with the section were more serious, and not as easily rectified: The section left open the possibilities that (i) a lender's notice that eurocurrency reserve requirements had ceased or no longer imposed additional costs would not terminate the borrower's obligation to pay additional interest, (ii) the additional costs would not have to be caused by the lender's loans (although this may not have been an oversight), (iii) the lenders might receive a windfall if interest were to be paid on eurocurrency reserves, and (iv) the lenders might have inadvertently ruled out the possibility of receiving margin on eurocurrency reserves. While the maxims given above might have helped, they are not obviously linked to these particular problems. The time has come for some more general reflections on the current style of legal drafting.

THE PROGRAMMING STYLE

Like many other legal documents, the revolver was drafted in what I like to refer to as the *programming style*. In the programming style, documents are drafted at an extreme level of detail, with little attempt at explanation or orientation. The analogy is with a computer program written in a programming language. Like a computer program, the document will be precise because it breaks down each action into its component parts. In the programming style, you don't say "Pay the man what you owe him." Instead you say something like "Withdraw an amount of money equal to [calculation] from account such-and-such and transfer it to account so-and-so." The second sentence answers some questions the first does not, but it leaves open one big question the first sentence addresses directly: Why are we doing this?

By now, two problems with the programming style should be obvious: First, documents in the programming style are extraordinarily brittle. If a drafting assumption—for example, that lenders will receive no interest on eurocurrency reserves—proves false, the programmed routines may produce unwanted outcomes. Second, documents in the programming style, like computer programs themselves, tend to contain lots of mistakes (in computerese, "bugs").

Since a document drafted in the programming style contains little in the way of explanation or orientation, it is difficult to distinguish mistakes from intended results ("It's not a bug, it's a feature."). In the change-in-circumstances section, we were able to see the mistakes as mistakes only after we appreciated the match-funding strategy of the document, but that appreciation required an explanation that went well outside the four corners of the document. Similarly, there is no way to tell from the document whether the lender's failure to insist on margin on the reserves is a bug or a feature. How can we hold on to the programming style's detail while avoiding the mistakes?

COMPLEXITY AND TESTING

One reason that documents in the programming style contain so many mistakes is that they are so complex. Complicated things have more ways to fail than less complicated ones. A lot more can go wrong on a modern Boeing 777 airliner, for example, than a 1930s-vintage Douglas DC-3, and a lot more on a

DC-3 than on Lucky Lindy's *Spirit of St. Louis*. Yet the 777 is more reliable (not to mention faster and more comfortable) than the DC-3, and the DC-3 in its turn is superior to Lindberg's *Spirit*. The reason the more complicated aircraft work better than their simpler predecessors has a lot to do with technical progress, but it also has a lot to do with the organized application of experience, and in particular with *testing*. Before any passenger went aloft in a 777, every part and system had gone through elaborate tests. Testing is much of what engineers do.

Computer programs are also complex artifacts, and they require extensive testing, usually referred to as debugging. Few things are more certain than that a computer program will not work the first time it's fired up.

There is also, of course, a testing program for the artifacts of legal engineering. But compared to the testing engineers and programmers do, the testing of legal documents is hopelessly backward. Essentially, someone drafts the document and other people read it. If they notice problems, they alert the draftsman, who makes some changes. That's it.

Of course, if the arithmetical evolutions of the document are fairly simple, someone may sit down and do a numerical example. It is sobering to reflect on how often these examples show up problems. But with a truly complicated document, running a numerical example is so difficult that few readers attempt it. Nonetheless, if complicated documents are to work, they have to be tested. How can we improve the testing of complex documents?

EYEBALL TESTING

Complex documents are currently tested by sending out drafts to readers. I call this *eyeball testing*. Can eyeball testing be improved?

One way to improve eyeball testing is to have more people give the document a thorough reading. I am not talking about doubling the distribution list; I am talking about clarifying the document so that more of the people on the existing distribution list will be able to comment effectively.

Clarification will increase the effectiveness of eyeball testing, but it may also prevent mistakes in another way. Several people familiar with securitization documents have told me that many of the mistakes originated when the documents had to be modified to take account of a new securitization wrinkle. The job is often done by a bright associate, but even a bright associate may not understand all the document's subtleties. If the documents were clearer, the associate might have had a fighting chance of getting it right.

Clarification can be effected in a number of ways. Here are four: simplifying the language, providing explanations, using arithmetical notation, and using diagrams.

SIMPLER LANGUAGE

One obvious feature of the current drafting style is the extensive use of legalese—language only a lawyer could love. These days, everyone (including

me)²² has a book out teaching you how to improve your legal prose, so I shall not bother expanding on the maxims I gave above, but go straight to the conclusion: A less legalistic prose style would increase the effective readership.

A lawyer of the old school will occasionally object to a plain English document on the ground that it lacks “precision.” A legal term may catch a precise meaning that is not available in ordinary speech, and certain legalistic turns of phrase may clarify some matters that common parlance leaves ambiguous. But perhaps as often, the piling on of legalese will render the document so dense that obvious mistakes may elude even the most careful reader. A document that is difficult to read will often be a document that is not read, or that is not read to good effect—that is, a document that is not adequately *tested*.

EXPLANATIONS

One of the chief barriers to understanding any complex legal document is that the programming style provides so few explanations as to what any particular section, paragraph, or sentence is trying to accomplish.

Interestingly, computer programs do not suffer from the same lack of explanation. Programs written in BASIC, for example, contain “REM” (for “remark”) statements in the program. A REM statement does not affect the program—it is there only to remind a reader (or the programmer at a later date) what a particular bit of code is supposed to accomplish.

I have tried to use explanations (marked “explanation” or “comment”) in documents I have drafted, but have encountered resistance from other lawyers. This is surprising, since almost all technical materials benefit from examples. Even statutes are helped by commentary—just think how helpful the official comments are to understanding the Uniform Commercial Code.

I am not sure why lawyers are so opposed to placing explanations in documents, but I suspect that one reason is the fear that explanations will not be written with the same care as the rest of the document. As a result, it is feared that a sloppily drafted explanation may override a tightly drafted provision.

If you have been following the drift of this article, you will not be surprised at my view: it is more likely that the explanation will direct the reader (including a judicial reader) to the right interpretation than would a densely written provision standing alone. In particular, if the revolver at some point contained an explanation of match-funding, then a judge confronted with the document might be able to see what the ambiguous words intended.

Here is a simple example of the power of examples: Suppose a document specifies the interest for a loan as “LIBOR plus 1% per annum.” We are free to wonder: 1 percent of what? Probably what was intended was 1 percent of the principal amount of the loan, and not 1 percent of LIBOR. Thus, if LIBOR is 6 percent, the interest rate for the loan should be:

$$6\% + 1\% = 7\% \text{ per annum}$$

22. Mine is HOWARD DARMSTADTER, *HEREOF, THEREOF, AND EVERYWHEREOF: A CONTRARIAN GUIDE TO LEGAL DRAFTING* (2d ed. 2008). Some of the discussion of clarification here parallels sections of my book.

and not:

$$6\% + (1\% \times \text{LIBOR}) = 6\% + 0.06\% = 6.06\% \text{ per annum.}$$

But how do we make this clear to someone who is not aware of the parties' intentions? Several ways suggest themselves, one of which is to do what we just did above to clarify the intention: Use an example. Once we explain that if LIBOR is 6 percent, then the interest rate on the loan should be 7 percent per annum, there is no way to misread the verbal formulation.²³

Explanations need not show merely how arithmetical formulas work. One problem with the change-in-circumstances section was that the formula for additional interest failed to take account of the possibility that the lenders might receive interest on eurocurrency reserves. One does not expect drafters to be futurologists, but an explanation of why there was a formula for additional interest might have been helpful.

I am not suggesting that we do away with the detailed program-style drafting, only that the detailed drafting be supplemented by more loosely drafted explanations of what the detailed drafting is trying to accomplish.²⁴ It is like supplementing a computer program by a flow chart; you can use the flow chart to see if a particular bit of code produced the intended result. So perhaps there are some simple maxims here:

- *Explain why you're doing what you're doing.*
- *Use examples.*

ARITHMETICAL NOTATION

You may remember that one of the problems with the change-in-circumstances section was the ambiguity in the statement that additional interest on the loan would be at a rate "equal to the remainder obtained by subtracting (i) LIBOR for such Eurodollar Loan from (ii) the rate obtained by dividing such LIBOR by a percentage equal to 100% minus the then-applicable Eurocurrency Reserve Requirements." The clause might mean either:

$$\text{Additional interest rate} = [L / (100\% - \text{ERR})] - L$$

or

$$\text{Additional interest rate} = [(L / 100\%) - \text{ERR}] - L$$

(The difference is in the placement of the parentheses.) The ambiguity in the verbal formulation does not appear in either of the two arithmetical equations. Moreover it is reasonably obvious that the second equation can not be correct, a

23. Another way to clarify the intention would be to use arithmetical notation, discussed below.

24. Here and in the following sections I propose devices that seem to contradict my advice never to say anything more than once. The apparent contradiction is resolved in "Levels of Description" below.

failure that becomes even more obvious if we use an equation editor to show the equations in a notation that makes fewer compromises with the standard word processing tools:

$$\text{Additional interest rate} = \left(\frac{L}{100\% - \text{ERR}} \right) - L$$

versus

$$\text{Additional interest rate} = \left(\frac{L}{100\%} - \text{ERR} \right) - L$$

The use of arithmetical notation for clarifying arithmetical relationships is so obvious that we may ask why such notation is so rarely used. One reason may be purely practical: Before computerization, it was difficult to type arithmetical symbols or to lay out equations. But modern word processing programs now come with equation editors, which make it easier to produce equations and other arithmetical objects. It is how I produced the arithmetical notation for this article. There are still problems—the equation editor that came with my word processor is awkward to use. Also, arithmetical notation created with an equation editor may not be converted properly if you exchange a document with someone using a different word processing program.

Given the practical difficulties with producing arithmetical notation, lawyers tend to stay with verbal formulations that date from the days of typewriter technology. The advantages of arithmetical notation are so great, however, that it should be used more regardless of the practical difficulties. So the take-away might be:

- *When dealing with arithmetical calculations, use arithmetical notation.*

PLAIN ENGLISH?

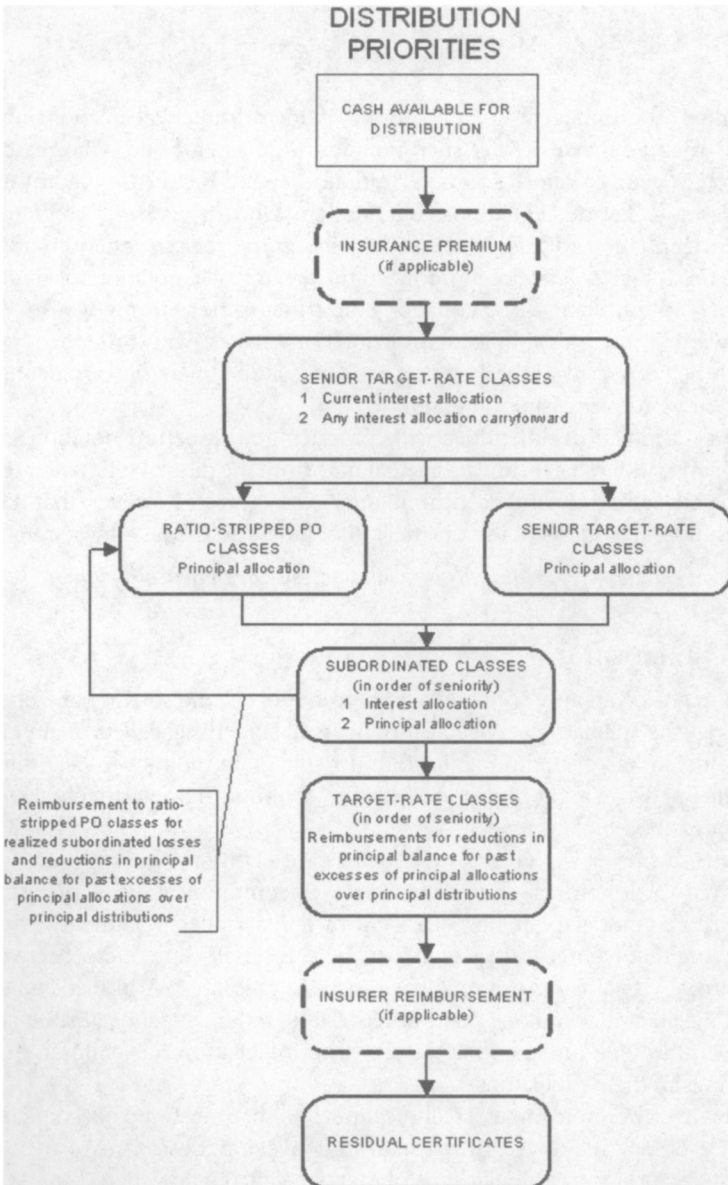
This might be an appropriate place to pronounce some sort of benediction for plain English. The battle between proponents of something called “plain English” and the defenders of traditional legal drafting is often thought to be a difference between English readily understood by the common man and technical jargon only understood by lawyers.

For me, however, the object is clarity. In part, clarity involves precision—I am not partial to sloppiness—but it also involves communication. A precise document written in indecipherable code is by my lights a failed document. Yet there is no denying that technical devices—“jargon” if you will—are often effective communicators. The obvious example has just been presented: Arithmetical notation is not English at all, let alone plain English. It is, rather, a technical language that is so useful in life’s pursuits that we see fit to inflict it on our children from the beginnings of their educations.

There are other non-English technical devices that most of us become familiar with in everyday life that can be useful in conveying ideas. One of them is the diagram, including a particular type of diagram called a flowchart.

DIAGRAMS

In computer programming, a flowchart is a step-by-step diagram of a process, often a reasoning process. Flowcharts take complicated processes, break them down into components, and then show how those components contribute to the final product.



Here's an example of a diagram from a prospectus for mortgage-backed securities. Even if you don't know what is being shown, it should be obvious that this picture is worth several thousand words²⁵:

A flowchart for a computer program is not the program. Rather, it is a useful device for constructing a program, because it breaks the task into parts and shows their relationship. And it is a useful device for explaining how the computer program works: This is how the programmer broke down the task; a different programmer might have broken the task down differently, and the result would have been a program that worked differently, even if it reached the same result.

A flowchart can also give an excellent explanation of legal relationships. I shall leave it to your experience to justify this claim: How often have you paused while reading a legal document to draw a diagram much like the one above?²⁶ And if it is so helpful outside of the document, why do lawyers refuse to use diagrams (including flowcharts) inside the document?²⁷

As with arithmetical notation, legal documents may seldom contain diagrams or other graphical explanations because of the purely practical difficulties in getting them into the document. I have seen recognizable renditions of the Mona Lisa done with a typewriter, but for most of us—and our secretaries—the production of even the simplest diagram would be a massive strain on our typing skills.

But that was yesterday. Today, it is easy to incorporate a diagram into a document. How easy? Well, the flowchart example above was produced using a well-known (outside the legal community) shrink-wrap program. Starting more or less from scratch, I learned all the skills and produced the diagram in the equivalent of a long afternoon.

Diagrams do not explain everything—but then, nothing explains *everything*. We cannot do without words, but we should not underestimate how much information can be conveyed graphically. Take a look at an ordinary road map. How many words do you think it would take to convey all the information contained in that map? No one would be so foolish as to try to replace a road map with a word description.²⁸ How can we be so confident that the convoluted descriptions in legal documents are not just the verbal poor cousins of a rich graphical presentation?

So why is there such resistance to the use of diagrams? In my own experience as an in-house counsel, I was unable to get my superiors to invest a few hundred dollars in a diagramming program until that happy day we received an SEC com-

25. Readers familiar with residential mortgage-backed securitizations will note that the flowchart (and the prospectus and pooling and servicing agreement from which it derives) use a somewhat non-standard terminology.

26. A lawyer friend once constructed a flowchart for a credit card securitization. It ran five pages and contained eighty-nine connected boxes. But it proved a clearer guide to the securitization than the hefty pooling and servicing agreement from which it derived.

27. For a plea for wider use of diagrams and other graphical aids in legal documents, see Steven O. Weise, *Get Your Crayons Out*, BUS. L. TODAY, May/June 1999, at 26.

28. For years my wife and I would give guests complicated verbal directions as to how to find our house. Then some kindly soul invented Google Maps.

ment on a registration statement oh-so-gently suggesting that diagrams would be helpful.

So far, I have talked only of eyeball testing, and my concern was to clarify the document as a means to increasing the number of effective testers. It is now time to think about giving our testers a more powerful tool.

SPREADSHEETS

A spreadsheet is a computer program that is familiar to most of us.²⁹ For those who have never used one, here is a brief introduction.

A spreadsheet allows the user to fill in information on a grid that looks like this:

	A	B	C	D	E
1					
2		2	4		
3		B3			
4					
5			[B2+C2]		
6					
7					
8					
9					
10					

The grid can be extended down and to the right, in each case by hundreds or thousands of rows and columns.

Each box, or “cell,” of the grid has a unique “address” formed by the letter at the top of the cell’s column and the number at the far left of the cell’s row. As an example, I have placed a “B3” in the cell that has that address.

You can place numbers or letters in any cell, as I have done in cells B2, B3, and C2. You can also place references to other cells. Thus, in cell C5, I have placed “[B2+C2],” which refers to cells B2 and C2. And most important of all, if I had left out the brackets, and instead written “=B2+C2” in cell C5, the spreadsheet would not have shown “=B2+C2.” Instead, the program would have assumed (correctly,

29. I discuss spreadsheets precisely because they are familiar, but most of what I say about their potential use in documents would apply to other types of computerized calculations or processes.

in most cases) that what I wanted in cell C5 was the sum of whatever was in cells B2 and C2, and therefore would have shown a “6” in cell C5.

To see the power of spreadsheets, assume that you have set up a spreadsheet to compute your income taxes. In one column of the spreadsheet you might have listed your charitable contributions, with the amount of each separate contribution in a separate cell. Suppose the cells are C1 through C20. In another cell, D1, you have a formula for the sum of the amounts in cells C1 through C20, which is your total charitable contributions. (You sum C1 through C20 even though you only have entries in C1 through C20 for reasons that will be revealed in the following paragraph; summing the empty cells C21 through C30 will not throw off the calculation.) Cell D1 is then picked up in another cell that sums up itemized deductions, and so on until you have computed your income tax.

At which point, rummaging through the pile of paper on your desk, you find a cancelled check for \$25 to the Red Cross that you forgot to enter in the spreadsheet. If your spreadsheet was paper, you would have to start all over, but with a computer spreadsheet, *no problema!* You enter “25” into cell C21, and instantly, cell D1 increases by 25 and all the other cells that depend on D1 also recalculate. Nothing to it.

Now suppose we set up a spreadsheet to do all the calculations required for a complex document such as the pooling and servicing agreement for a credit card securitization. Some cells will involve calculations, for example of monthly interest on the various classes of certificates. Other cells will simply represent amounts that are “given” rather than calculated, such as the amount of payments made by card holders in the month, or the amount of losses that are charged off.

With such a spreadsheet, we can run tests. We simply plug in a range of numbers for card holder payments, chargeoffs, and other given amounts, and see if the calculated results—interest and principal payments, for example—make sense. It is not a foolproof method, but it turns up mistakes surprisingly often.

Constructing such a spreadsheet is not a project for a rainy afternoon. Indeed, the problems are large enough that some issuers may not have a spreadsheet or other computer program that deals with all the eventualities covered by the typical pooling and servicing agreement. Since many of these events are of extremely low probability, the most cost-effective approach may be to handle them by manual means in the unlikely event that they ever come up. Since we may have already spent the time and effort to develop the agreement, there seems little point in spending additional time to augment it with a spreadsheet. But if we are asked to draft a new document with complex cash flows or other arithmetical manipulation, then we can ask: Should we do a verbal construct or a spreadsheet? And here the spreadsheet answer seems to have significant advantages.

There may be problems with using a spreadsheet rather than a verbal formulation that I have not anticipated, but two apparent problems need not trouble us. First, you can print a spreadsheet on paper—that is, print it out with formulas in the cells rather than results. Second, the spreadsheet can be fixed by “locking” the cells so that the formulas and certain fixed parameters cannot be tampered with.

DO WE NEED THE WORDS AT ALL?

Charles Fox recounts that one Sunday evening he received a call at home from some lawyers struggling with some tricky anti-dilution provisions:

They had concluded that it was literally impossible to effectively translate these concepts into words and suggested attaching to the contract as an exhibit (and incorporating by reference) a copy of the spreadsheet software that actually did address all of the scenarios. Concerns over the enforceability of this approach (including statute of frauds considerations) led the parties to continue to pursue the translation of the concepts into words. They were ultimately successful.³⁰

Which raises an interesting point: Can we just hand over all the complex bits to the computer geeks? How about “Each party shall be entitled to the shares of stock calculated by the attached spreadsheet” as a cure for all our drafting problems?

Before trying to answer that question, let us clear up two points from Fox’s story: First, I find it hard to believe that there could be a problem with the statute of frauds. (It sounds like something the lawyers dreamed up to stop them from doing something they regarded with suspicion.) Second, I am not as confident as Fox that “They were ultimately successful.”

So can we just yield all power to the computer? No. As you probably know from your daily encounters with Microsoft, computer programmers can make mistakes. I worked for years on residential securitization programs where the payments were computer driven. Things generally went pretty smoothly, but there were always fixes and patches being made to the programs.

Nonetheless, it seems silly to have the legal documents ignore that the processes described are often those of a computer program. Just as the word description may act as a corrective for a programming error, so the program can act as a corrective for a legal drafting error. The rational thing would seem to be to have a document with multiple levels of description—statements of objectives, examples, flowcharts, spreadsheets, or computer code—and when something goes haywire, reach an acceptable answer through a process of triangulation.

LEVELS OF DESCRIPTION

Sharp-eyed readers may have noticed that my injunction to use multiple levels of description, such as explanations, examples, and diagrams, seems to sort oddly with my earlier injunction not to say anything more than once. Perhaps a more precise statement of the earlier injunction would be:

- *Never say anything more than once at the same level.*

I cannot state exactly when descriptions are at different “levels,” but a few examples should make the concept useable. A computer program in a programming language and a flow chart of the program are descriptions of the same process at different levels. Similarly, a statement of the calculations of additional interest

30. Fox, *supra* note 17, at 100 n.3.

with respect to eurocurrency reserve requirements, and a statement that these are intended to compensate for lost interest on the reserves, are statements at different levels; the former deals with the calculations, the latter with the reasons for doing the calculations.³¹ Clearly, a computer program in programming language and a flowchart of the program complement each other, whereas two differing programs or two differing flowcharts would raise problems. Similarly for legal documents: A description of the mechanics of a process and a description of the motives for the process will complement each other, whereas non-identical descriptions of either the process or the motives may prove problematic.

WHICH DESCRIPTION IS PRIOR?

Some may argue that a program in a programming language is the real program, whereas the flow chart is merely commentary. Similarly, some may argue that the formula for additional interest for eurocurrency reserve requirements is the real agreement, and the statement of motives mere commentary. Accordingly, the flow chart and the statement of motives should be accorded a secondary status, to be consulted only when there is a problem with the primary materials. In legal language, explanations and other secondary materials would be kept out of the document, to be consulted as parol evidence when a problem arises with our understanding of the primary materials.

I doubt that this will work. There is nothing ambiguous about a computer program coming up with the “wrong” answer. The fact that the answer is wrong can only be determined by measuring the answer against standards external to the program—the flow chart or perhaps a plain language statement of what the program was designed to do. Similarly, there’s nothing ambiguous about the formulas for calculating additional interest required by eurocurrency reserve requirements. So when the Fed comes to pay interest on reserves, or makes other changes in the rules, we may want to appeal to a statement of motive to justify modifying the formula. Similarly where the formula denies the lenders margin on reserves. But under the proposal that we consult statements of motive (or other statements at a different level) only in case of ambiguity with the main statement, we can never get there, since the formula is not ambiguous; it simply produces the wrong answer—wrong by standards that the proposal would separate from the agreement.

Of course, having statements at multiple levels may lead to confusion, with different statements pointing in different directions. But this is, at least in part, desirable. Arithmetical formulas may make descriptions of motive clearer, while descriptions of motive may enable us to correct formulas. Someone with good judgment will have to decide how to balance the conflicting descriptions. I find nothing odd that businesspeople, and occasionally judges, will have to use their

31. For the philosophically minded, the distinction parallels Aristotle’s distinction between descriptions in terms of efficient causes and descriptions in terms of final causes.

judgment to decide how a document is to be interpreted. What I am arguing is that they be given the tools to do the job.

WILL IT WORK?

These days, almost all the documents I draft use simple language. But I have never incorporated a spreadsheet into a document. And, due to objections by counsel on the other side, explanations, arithmetical formulas, and diagrams that I have attempted to place in legal documents have often been left on the conference room floor. How can I be so confident that such devices are appropriate?

Remember, we are talking here about precision—that is, drafting a document that adequately describes a series of cash flows and calculations. So the question is not, How can I be so confident?, but How could I possibly be wrong? Yesterday, I walked into the local Borders, went to the technical section, and pulled down an introductory calculus text. On every page there were explanations, diagrams, and arithmetical notation. (Sorry, no spreadsheets, though there were plenty of formulas.) Do we believe that the tools we allow—and deny—ourselves make the contemporary complex legal document as precise as a calculus textbook?

METHODOLOGICAL POSTSCRIPT

Many of the statements I make in this article regarding the practices of legal drafters rely primarily on my experience of three decades in the trenches. I would prefer to rely on empirical studies of a broad range of legal documents, but I am not aware of any such studies. Nor is it obvious how such studies might be done. Legal drafting is largely a cottage industry, and most legal documents are—to borrow a trendy term from the gourmet-food world—artisanal. Even for large international firms, documents are usually produced by small teams.

For the products of non-legal engineering, such as automobiles and aircraft, information regarding defects flows up from consumers and repairmen to manufacturers and regulators, is compiled in databases, and flows back down as technical bulletins and recalls. But the dispersed production of legal documents, along with client confidentiality concerns, the threat of litigation, and cost considerations may make such a model unworkable for legal products.

One exception might be the standard documents produced by industry groups, such as the ISDA Master Agreement (Multicurrency-Cross Border) fathered by the International Swaps and Derivatives Association, Inc.,³² and the Global Master Repurchase Agreement from the Securities Industry and Financial Markets Association.³³ My personal experience with these organizations and documents is limited. However, it appears that these forms are revised only infrequently—the

32. Available for \$60 at INT'L SWAPS & DERIVATIVES ASS'N, INC., <http://www.isda.org/publications/pubguide.aspx> (last visited Aug. 2, 2010).

33. See SEC. INDUS. & FIN. MKTS. ASS'N, GLOBAL MASTER REPURCHASE AGREEMENT (NOV. 1995), available at <http://www.sifma.org/services/stdforms/pdf/95globalrepo.pdf>.

current ISDA document is dated 2002, the current master repurchase agreement 1995—and I am not aware of any formal process for assembling information or alerting users about documentation defects.

I have somewhat more experience with model agreements, having served on (and done some drafting for) the Joint Task Force on Deposit Control Agreements of the Section of Business Law of the American Bar Association, and as editor for the Business Law Section Commercial Finance Committee's Model First Lien/Second Lien Intercreditor Agreement Task Force.³⁴ Again, there is no organized process for reporting problems upstream to drafters or disseminating technical fixes downstream to users.

One can hope, however, that standard form documents created by large organizations will someday dominate the field, that there will be more organized reporting and correcting of defects, and that the creation and maintenance of such documents can then become an object of empirical study. Until then, we shall have to rely on idiosyncratic observations, which will be more or less convincing as they resonate with the readers' own experience.

34. See Joint Task Force on Deposit Account Control Agreements, ABA Section of Bus. Law, *Initial Report of the Joint Task Force on Deposit Account Control Agreements*, 61 Bus. Law. 745 (2006); Comm. on Commercial Fin., ABA Section of Bus. Law, *Report of the Model First Lien/Second Lien Intercreditor Agreement Task Force*, 65 Bus. Law. 809 (2010).