Part I. The Structure of Problems and PROBLEMS

1. Cognitive Structure

Four Definitions of Problem

It is difficult for our students to grasp what we mean by "problem," much less an "interesting" one, partly because we and they use the word in contradictory ways. First, in the ordinary language of our ordinary thinking, we associate "problem" with something unpleasant and difficult: indigestion, a dead battery, AIDS, Bosnia. But in our academic discourse, we use "problem" in at least three other ways.

- In its most trivialized form, a "problem" is something like "If four people can paint three walls of a room in two hours, how long would it take . . . ," an exercise that ideally measures, diagnoses, and teaches, but is more often a routine task with an algorithmic solution, something close to a five-paragraph essay.

- Among cognitive scientists, a problem is typically conceived of as a task, because their principal interest is in how rats and people solve problems, not in how they find or experience them, an objective that I think explains why they standardly resort to the metaphor of a space to be traversed, as a "gap which separates where you are from where you want to be" (Hayes). While this definition implicitly makes present point A less desirable than hoped-for point B, cognitivists do not build into their definition of "problem" the same negative feeling associated with "problem" in our ordinary language; beyond the mental effort entailed in solving one, for them a problem is devoid of affect. It simply defines the space through which someone or something tries to get from here to there, either literally as through a maze or figuratively through the calculations necessary to get to the cube root of 5.

- In the philosophy of science, problems are also spatially metaphorized, but often not just *as* a space between here and our goal, but as what is *in* that space. A problem is constituted by "obstacles or difficulties in the way of reaching goals" (Nickles) ; "a hurdle that we must surmount in order to achieve a goal" (Hattiagandi). More to our purpose, philosophers of science are interested in the problems that motivate our intellectual lives. Thus they are interested in problems not as any task, much less as unpleasant situations in our daily lives, but as significant intellectual projects defined by social and historical constraints and whose successful solution will be assessed by a community of discourse – the "problems" of evolution, quantum mechanics, mind vs. body. Such problems are variously characterized as "Explanatory Ideals [minus] Current Capacity" (Toulmin); as "a demand that a certain goal be achieved plus constraints on the manner in which the goal is achieved, i.e., [community defined] conditions of adequacy on the problem solution" (Nickles); as research projects ". . . constituted by constraints set by background theories" (Sintonen) – the problems we think of not as troublesome but as the *raison d'être* for the life of the mind.

But for our purposes, all of these definitions are flawed. Our ordinary language definition makes problem a holistic, internally unstructured condition or event: "My problem is _____.[fill in the blank with a single noun – alcoholism, poverty, depression] " It does not suggest how to decompose a problematical situation into elements that we can articulate as a PROBLEM. Worse, it implies that problems always have negative associations: When we ask a friend staring glumly into his beer what the problem is, we do not expect as a lugubrious response, "If two trains 40 miles apart leave their stations at the same time . . . " or "Fertility images in Yucatan between 300 and 600 AD."

Unlike cognitivists, philosophers of science address only problems that we consider "interesting," but along with cognitivists, they decompose "problem" into components – Place A, Place B, the distance between them, the obstacles therein, and so on. But that cognitivist or philosophical spatial figure structurally contradicts ordinary usage: In ordinary usage, we identify a problem not as the *space between* A and B nor even as the obstacles therein, but as *state A itself*. In ordinary usage, "the problem of AIDS" *is* AIDS, not "the gap between" having and not having it. Having AIDS is one problem; discovering its cure is another; and then actually traversing that

gap and overcoming the obstacles – i.e., getting rid of AIDS – is a different one yet. (And problems such as "Two trains leave their stations . . ." are wholly irrelevant to our concern, because they epitomize what it is about some problems that is least interesting – they have already been solved.)

So not only can we find no common denominator among these definitions; the senses of "problem" that we associate with "algorithmic," "bad," and "interesting" contradict one another, and none of them decompose a problem into its elements in a way that suggests how might we articulate them. So it is not surprising that students associate their ordinary language sense of problems as nasty or routine with our academically privileged definition of problem as interesting, and that as a consequence they are not infrequently baffled by what we mean when we say that they have a problem because they do not have one.

A Definition of Problem: Two Necessary Elements

We need a definition of "problem" that helps us decompose what we feel is a problematical situation into parts in a way that lets us articulate those parts in the statement of it as a PROBLEM, particularly in introductions. Such a definition should subsume both "bad" and "interesting" problems, and it should provide a heuristic that not only helps us look for a PROBLEM in mere accumulated knowledge, but lets us find one, construct it, and then evaluate its potential interest to a community of readers.

I begin with two situations not rhetorical and so not yet, in my terms, PROBLEMS:

1. On my way to get married, I get a flat – no spare, empty road. If I am late, my intended leaves me. She is rich and generous; I am in debt. Do I have a problem?

2. At the empty church, listening to the radio, I hear my lottery number announced – I have won a million dollars. I have only to appear on TV to pick up the check. Do I have a solution to at least one of my problems?

The default answers to both questions would seem to be yes, but could be no: If I didn't want to get married under any circumstances but was willing to only because I promised, my flat tire is no problem; indeed, it is a solution. And if I am hiding from the mob because they want five million minimum or my legs, then getting the one million is no solution, but a new

problem. I transformed a problem into a solution and a solution into a problem by changing the relationship between two components that are both necessary for the existence of either a problem or a PROBLEM (but not sufficient for the latter, a third component being still necessary for that):

> **Problem-component 1**: There must be a "de-stabilizing" condition. This condition can be literally *any state of affairs* – from a flat tire to winning the lottery – so long as it entails an effect of the kind next described as Problem-component 2.

> **Problem-component 2**: That de-stabilizing condition (hereafter just "Condition") must entail consequences that are undesirable to the person who claims the problem. Call these undesirable consequences of the Condition its "Costs." My flat tire is a Condition whose entailed Cost is that I lose my intended (if I really want to get married); my winning and picking up a million is a Condition whose entailed Cost is that the mob takes it and also breaks my legs.

By this definition, *just* having some painless but deadly disease that will kill me tomorrow is not alone a problem; it is not necessarily even a Condition in a problem. My deadly disease is the Condition of a potential problem *if and only if* that Condition entails for me a Cost that I want to avoid. I might not want to die tomorrow, but I am unlikely to worry about it now if I am scheduled to hang this afternoon.

Tangible problems of the world such as flat tires, broken legs, and deadly diseases are, as we shall see, structurally identical to what we call conceptual problems, but are, in a few crucial ways, different. As suggested, the Condition of a tangible problem can be literally any state of affairs (in *Paradise Lost*, the existence of God was a problem for Satan) and the Cost of a tangible problem is almost always defined by a consequence that makes the person who has the problem unhappy. On the other hand, the Condition and Cost of conceptual problems are quite different. The Condition part of a conceptual problem is always defined by a relatively small group of words that refer to a cognitive state we name ignorance, misunderstanding, error, paradox, discrepancy, puzzle conflict, dispute, disagreement, and so on, words that imply some gap in knowledge or flaw in understanding. We imply the Condition to a conceptual problem in a question that implicitly defines the range of our ignorance or misunderstanding: how many stars are in the sky? why do cats rub their jaws against things? did Latin epics influence the creation of *Beowulf*?

But that gap in knowledge or flawed understanding is part of a conceptual problem *if and only if* not finding the answer to the question

entails a Cost I do not want to bear. That Cost, however, is also defined by a gap in knowledge or flawed understanding *at a higher level of significance for the person asking the question.*

"How many stars are in the sky?" I don't know, but I thereby have no problem, because to be candid, I don't care that I don't know. I wouldn't mind knowing, but my ignorance of their number is no Condition to any conceptual problem that I can articulate, because I can think of no Cost that *I* bear if I go to my grave not knowing.[5] But for an astronomer, not knowing the number of stars in the sky is the Condition to a profound conceptual problem because the Cost of not knowing that number means that astronomers do not know something *much more important*: how much matter is in the universe? and not knowing how much matter is in the universe means that they don't know something more important yet – will the universe continue to expand into eventual oblivion or collapse back into itself and start over? In other words, what is not a problem for me might be a big one for someone else, who might be able to persuade me that I *should* have a problem with the number of stars in the sky.[6]

A rough heuristic to identify Conditions and Costs is to insert the question "So what?" between the sentences that we think state a Condition and the sentences that we think state its Cost. If a "So what?" is plausibly elicited by the prior sentences and plausibly answered by the following ones, if we do not feel compelled to ask once again, "So what?" but rather "Oh, I see," we have identified Conditions and Costs at least to our own satisfaction.

The hole in the ozone is widening. *So what*? I might get cancer. *Oh, I see.*

I have a flat tire. *So what*? I won't get married. *Oh, I see.*

I won a million. *So what*? When I pick it up, the mob will break my legs. *Oh, I see.*

I have a disease called exanguinary urotoma. *So what*? I will die.*Oh, I see.*

I don't know how many stars there are in the sky. *So what*? Until I know, I can't

calculate the total mass of the universe. *So what?* What do you mean "So what?"

As we shall see, the trick is identifying Costs to the satisfaction of our audience.

We can complicate this definition: Moving from A to B, from ignorance to knowledge, from flawed understanding to better understanding, must be difficult, unobvious, take thought, etc (Gagne). But as John Dewey put it, whenever anything "no matter how slight and commonplace in character – perplexes and challenges the mind so that it makes belief at all uncertain, there is a genuine problem, or question" (13). But in our terms, the perplexity or challenge that makes belief uncertain enough to constitute an "interesting" problem must entail a Cost to leaving that perplexity or uncertainty unresolved, and that Cost must be greater than the Condition that exacts it. So for our purposes, Dewey's definition stipulates only half the matter – the de-stabilizing Condition. In addition to the Condition of perplexity and challenge, there must be a Cost to leaving the perplexity unresolved, to leaving the challenge unmet. But before that problem rises to the level of a PROBLEM, that Cost must be exacted on someone other than ourselves: it must be recognized and acknowledged as a Cost exacted on our readers.

Transforming a Problem into a PROBLEM

Before we can articulate a problem rhetorically as a PROBLEM we require this third element – a community of readers who acknowledge and accept that the Cost has an impact on *them*. If I were obsessed with eliminating a gap in knowledge about the number of trees on the island of Zanzibar, I might have a problem if not finding out exacted on me the Cost of sleepless nights. But it would be a problem with no rhetorical dimension, because so far as I know, no one but me would pay the Cost of not knowing. But my purpose here is to describe the *rhetorical* structure of a substantive academic and professional problem that we articulate for readers as a PROBLEM that *they* might find not just "interesting," but as something in which they might recognize *an interest*, something in which they have a stake. Therefore, the third component:

> **Problem-component 3**: There must be a community of readers who perceive the Cost as undesirable *to themselves*, readers who are not just interested in a topic, but who have – or we believe should have – an interest in a problem being solved. (Crucial here is the distinction between just "*being* interested in" and "*having* an interest in.")

However much *we* might not want to bear the Costs of a Condition, if our readers perceive no Cost to *them*, then they have no problem and we have no PROBLEM, which constitutes a rhetorical problem for us, if we have an interest in their sharing our problem. This third component thus

requires either that our readers already know that they have the PROBLEM we pose (an exigence that seems to exist in the objective situation), or that by an act that parallels their willing suspension of disbelief when we ask them to read a fiction, they must will themselves (i.e., we must persuade them) to suspend their skeptical indifference to a PROBLEM that they did not know they had, and at least for the space of time it takes to read our introduction, be willing to imagine having it (the exigence that we construct for them and that they must play along with).

In either case, however, a PROBLEM is always socially constructed: if our audience already knows about the problem, then it has been constructed for us; if not, we have to construct a PROBLEM so that our readers will be not just interested in our PROBLEM, but have an interest in its Cost and thus in its solution.[7]

Here is the schematic structure of a substantive PROBLEM:

Destabilizing Condition ➡ Costs ➡ Community of Readers
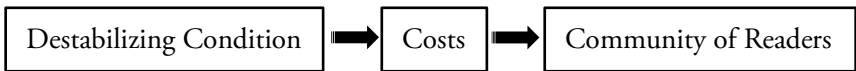
As I wrote this, I was wrestling with lower-case-problems, trying not only to articulate but to discover, define, and refine my upper-case-PROBLEM. It is a commonplace in our field that this act of writing helps us solve our problems, but a paradox that I will address below is that by helping us discover our solution, writing also helps us discover and define our PROBLEM. Unfortunately, it is difficult for our students to recognize even the possibility that solving a rhetorical problem might help them create a substantive PROBLEM, much less articulate it well, for at least three reasons:

- First, we must know the kinds of problems that our community of readers is likely to entertain as plausible. In regard to a tangibly pragmatic problem like AIDS, we can be reasonably sure that our widest community recognizes it as a *tangible, practical* problem that could become the basis for a *research* PROBLEM. But when we ask our students to write about what happened in *Hamlet* or ancient Greece, they have no tangible problem that pragmatically motivates them to formulate a conceptual problem that will motivate their research PROBLEM about either of those topics, much less know what conceptual problems a community of discourse will think plausible, much less "interesting" about them. Not until they become advanced students are they likely to be part of any

community of discourse that defines itself by having an interest in problems involving either *Hamlet* or Greece, problems that we expect them to articulate in their papers as PROBLEMS.

- Second, many students do not understand in the first place that a central object of education is not just to acquire information; as many fail to understand that it is also more than to learn to solve problems. Only a few come to us inclined to *look for* problems and then articulate them pro-actively. And so most of our students become, at best, reactive solvers of problems presented to them; at worst, passive purveyors of received knowledge.

- Third, even when they overcome these obstacles, few of them understand the structure of a problem and the rhetoric of its articulation as a PROBLEM.

There is little we can do about their lack of knowledge of any community of discourse beyond their own narrow one; acquiring that knowledge and joining any community takes time (though I will suggest how we can provide them with transitional communities of discourse in which their own problems can evolve into PROBLEMS). But in any context, we can encourage our students to understand that finding and posing problems is important and to help them understand why writing about some kinds of problems is so difficult. But to do that, we must first understand how the structure of a problem informs the structure of a PROBLEM, particularly as we formulate it in an introduction.

2. Introductions and the Rhetorical Construction of a PROBLEM

A First Approximation

This two-part structure of a problem directly informs its articulation as a PROBLEM. A minimally explicit introduction states both a causal Condition and its consequent Cost (though as we shall see, one or both may be implied). Since a problem implies a solution, an introduction must refer to it as well, either by stating its GIST or by implicitly offering a PROMISE that such a GIST will be forthcoming (I hereafter fully capitalize when I refer to some functional element of an introduction realized in words).

A minimally explicit introduction thus requires two elements, the statement of a PROBLEM and a RESPONSE to it, typically its SOLUTION. The statement of the PROBLEM in turn consists of its two necessary constitutive elements, COST and CONDITION:

[(Recently, the thinning of the ozone layer has allowed sunlight to reach the earth unfiltered.) **CONDITION** (As a result, we are going to have more cancer and higher medical costs.) **COST**] **PROBLEM** [We can avoid these consequences only if we ban chemicals that degrade ozone.**GIST OF SOLUTION**] **RESPONSE**

As noted, the simplest way to locate CONDITIONS and COSTS is to determine between which two sentences or groups of sentences we might plausibly insert "So what?"

The thinning of the ozone layer is allowing sunlight to reach the earth unfiltered. [*So what?*] We are going to have more cancer and higher medical costs. [*Oh, I see.*]

No lesson is more crucial and more difficult for any of us to learn than that readers may not accept our first answer. When a reader again asks "So what?" to the statement not of the Condition but of what we think is a Cost self-evident to anyone, that reader, however implausibly, does not perceive how she will bear what *she* will count as a Cost, and so we have still failed to articulate a PROBLEM:

The thinning of the ozone layer allows sunlight to reach the earth unfiltered. [*So what?*] We are going to have more cancer and medical costs. [*So what?*] You will pay higher taxes and maybe die.

If at this point our audience had said not "Oh, I see" but again "So what?", we would have to acknowledge that she may never recognize what we think is her self-interest. The number of times we have to answer the question "So what?" is a metric of understanding the implications of a PROBLEM. By charting the points at which different readers stop asking "So what?" and say "Oh, I see," we define the concentric circles of wider and narrower communities of interest, which help define communities of discourse: nothing more clearly defines a community than its shared understanding of what it wants to avoid.

Typical introductions elaborate these elements in such detail and so variously (an issue we shall address in a moment) that their structures rarely stand out in the crisp relief that this formal analysis suggests: Typical introductions may describe Conditions briefly and Costs in detail, or vice versa; they make the SOLUTION explicit or only sketch it; they may explore

relationships among Costs and Conditions, with Costs becoming Conditions that exact yet more Costs. This simple structure may also be obscured by two more components that I will also discuss in a moment. Indeed, under certain circumstances, a problem may seem not to be expressed completely at all, but its structure may nevertheless be reconstructed in the mind of the reader. In short, I simply claim that despite apparently great surface differences, the rhetorical articulation of all conceptual PROBLEMS is (or more accurately, perhaps, should be) informed by this conceptual structure of a problem.

The first approximation of the underlying rhetorical structure of an *introduction* to a PROBLEM-solving text will thus look like the structure of a problem, but now the left-to-right order represents prototypical sequential ordering.

PROBLEM	**SOLUTION**
CONDITION COST	

Variations

We can re-arrange these elements: The elements in the ozone introduction might be ordered like these (Condition is italicized, Cost boldfaced, SOLUTION ordinary font):

COST 1 - CONDITION 2 - SOLUTION 3:

We are going to have more cancer and higher medical costs because *recently, the thinning of the ozone layer has allowed sunlight to reach the earth unfiltered.* We can avoid these consequences only if we ban chemicals that degrade ozone.

SOLUTION3- CONDITION2 - COST1:

We must ban chemicals that degrade ozone because *recently, the thinning of the ozone layer has allowed sunlight to reach the earth unfiltered.* **As a result, we are going to have more cancer and higher medical costs.**

SOLUTION3- COST1- CONDITION2 :

We must ban chemicals that degrade the ozone **because we are going to have more cancer and increased medical costs** *as a result of a thinning ozone layer allowing sunlight to reach the earth unfiltered.*

CONDITION2 - SOLUTION3- COST1:

Recently, the thinning ozone layer has allowed sunlight to reach the earth unfiltered. We must ban chemicals that degrade ozone **because we are going to have more cancer and higher medical costs**.

COST1- SOLUTION3- CONDITION2 :

Because we are going to have more cancer and higher medical costs, we must ban chemicals that degrade ozone. *Cancer will occur because recently the thinning ozone layer has allowed sunlight to reach the earth unfiltered.*

But while in principle free, the order of these elements is highly constrained. The most common order is: PROBLEM - SOLUTION, and within PROBLEM, CONDITION - COST. First, if the point of a text is to explicate a SOLUTION to the PROBLEM and the writer locates that point at the beginning of the text, then a statement of the GIST of that SOLUTION will predictably be expressed close to the end of the introduction. The point sentence of any unit of discourse prototypically appears in one or both of only two places: at the end of its introductory segment or at the end of the whole (Colomb and Williams 1986, Williams and Colomb, 1991). Furthermore, that order is supported by narrative logic: a PROBLEM seems temporally to create the need for its SOLUTION. If the SOLUTION conventionally appears at the end of the introduction, then that allows only two possible orders:

CONDITION - COST - SOLUTION OR COST - CONDITION - SOLUTION

But of these two orders, only one also reflects chronological order, because causal CONDITIONS seem narratively to entail their COSTS. Thus the "privileged" order is CONDITION - COST - SOLUTION.

That is not to say that we never see its alternatives. Here are the first three sentences from a *New York Times* editorial (January 16, 1993, p.14):

Women and abortion providers who need Federal legal protection from Operation Rescue's spiteful, violent blockades of abortion clinics will have to go to Congress. The Supreme Court, by refusing to apply existing law against domestic terrorism, has made the trip necessary. Fortunately, there

is broad support in Congress and the incoming Clinton Administration for a protective new law.

The first sentence states the COST of the CONDITION, the second the CONDITION. The third sentence is the gist of the SOLUTION. Only if we reverse the first two sentences can we plausibly insert "So what" between them (I condense):

The Supreme Court has refused to apply the law against domestic terrorism. [*So what?*] Women who need protection will now have to go to Congress.

By stating a Cost first, the writer opened more dramatically, but at the marginal expense of requiring readers to work backwards from effect to cause. In so doing, the writer has not "violated" any rule. But all things being equal, readers process most efficiently those linguistic and rhetorical patterns that reflect a sequence closest to a privileged prototype, in this case chronological order.

Because this concept of "privileged prototype" is central to understanding the full model of introductions that follows, it requires some explanation.

Privileging and Prototype Semantics

"Privileging" is a concept that arises out of recent work in prototype semantics (Lakoff, Langacker, Rosch, Rosch and Mervis, Mervis and Rosch, Taylor 1989, 1990, Tsohatzidis, Turner, Winters) and so far is surprisingly little used in composition theory (though see xxxxx). As opposed to the way logicians construct hierarchies of categories based on classical theories of Aristotelian logic, prototype semantics addresses how we actually construct mental categories and experience them. Prototype semantics differs from classical logical theory in two important ways, and both imply the concept of "privilege."

First, for classical logicians, any category in a hierarchy of categories is in principle logically equal to others, regardless of its super- or subordinate level. The sub-category of cups we call "demitasses" is in the category "cups," and cups in the category "crockery," and crockery in "tableware," etc. Those categories differ in their generality, but not in any logically principled way; none is privileged over any other.

In our mental lives, however, we do not respond to all categories up and down certain hierarchies equally. In some hierarchies, one particular

category is more equal than others above it or below it. For example, imagine what we think of when someone says "cup" or "table" or "hammer" on the one hand, and "crockery," "furniture," and "tool" on the other. The image that comes to mind when we think of "cup" is different in *quality* from the image that comes to mind when we think of "crockery." If we are asked to think of "crockery," "furniture," or "tool," or any category more general than those, most of us have no sharply defined image. If we do, that image will only accidentally agree with anyone else's: Ask five people to draw a picture of "crockery" and you are likely to get five different pictures.

But if most of us were asked to draw a picture of a "cup," we would draw an image that is visually better bounded and predictable: a concave object of a certain size and thickness, with curving sides wider at the top than the bottom, with a handle for a finger. If we are then asked to think of a specific kind of cup, table, or hammer – "demitasse" or "coffee table" or "claw hammer" – we may draw an object that is different from "cup" or "table" or "hammer," but the difference is not as great *qualitatively* as the images called up by "cup" on the one hand and "crockery" on the other. The specific image of "demitasse" is closer to the specific image of "cup," than the specific image of "cup" is to the amorphous image of "crockery." A category like that named by "cup" or "hammer" or "table" is a "basic level" category. Its members are those that we image most easily and, perhaps as a consequence, we experience most directly and with the greatest cognitive efficiency.

The second difference between classical logic and prototype semantics is, for our purposes, more important. In a classical category, all cups are equal; none more equal than any other. But in our mental lives, certain members of basic level categories are closer to a cognitive "center" of that category than are others. Some objects we call cups, for example, are unequivocally cups, even when filled with milk and cornflakes; they are so close to the prototype of a cup that they will always be cups. Other cups, however, look very different: two holes in the handle for two fingers, almost but not quite large enough to be a bowl, with straight sides angling inward from a base wider than the opening, etc. But we still call such an object a "cup" and not a bowl, mug, or glass. But it would not be a "typical" cup. In fact, were it large enough and filled with cornflakes and milk, we might call it "a bowl."

Prototype semantics argues not only that hierarchies of certain common concepts have a basic level category, but that for every basic level category, we have a concept of a most "representative" member, a concept that

defines the cognitive center of that category. In this sense, just as one category in a hierarchy – the basic level category – is cognitively "privileged" over others, so some members of basic level categories are "better" members than others: They are cognitively first among logical equals.

Here is the point: We mentally manipulate experiences that are closer to prototypes more quickly and more accurately than we do the experience of objects that, strictly speaking, may be perfectly legitimate members of a category, but are "more distant" from the prototype. There is evidence that when we think about concepts involving basic level categories, we reason not on the basis of what is common to the whole category, but on the basis of that category's most representative member, on its prototype. There is some debate whether we should understand prototypes to be a specific object or an idealized conceptual entity or just as a bundle of features (Winters). But that debate is not important here. What is important is the concept of prototype and the related notion of "privilege."[8]

Privileged Order and Content in Language

In regard to prototypical linguistic entities, there are two kinds of privileging. The first is a privileged ordering of elements. At the sentence level, for example, the privileged order is Subject - Verb - Complement:

Subject	Verb	Complement
A large truck	came	down the street.

But it is not only sometimes grammatically acceptable to reverse the prototypical order; it is sometimes rhetorically desirable:

Complement	Verb	Subject
Down the street	came	a large truck.

Depending on the context, the benefit of beginning a sentence with old information and concluding it with new may more than balance the added marginal cognitive burden on our readers of having to process the reversed privileged order.

There is a second kind of privileging: In addition to a privileged sequence of positions, those individuals positions have privileged ways of being "filled" with content. For example, at the level of sentences, the privileged occupant of a subject position is a word referring to a human agent; the privileged occupant of the verb position is a word referring to a visible action that the human agent performs; and the privileged occupant

of the complement position is a word referring to a physical object that is changed by the action indicated by the verb (Langacker; Taylor, 1989, 1990; Winters).

In fact, we can describe a set of privileged relationships among the fixed sequential order of elements in a sentence and the privileged variable occupants of those positions[9]:

	Topic		Stress	
Old Information		New Information		
Subject	Verb		–	
Characters	Actions		–	

Fixed	
Information-level	
Variable	
Fixed	
Scenario-level	
Variable	

In recent years, prototype semantics has allowed us to illuminate a number of puzzling issues in regard to language and rhetoric – why grammatical definitions should endure for so long when they are self-evidently inadequate, definitions like "a noun is person place or thing"; "a verb is an action"; "a subject is doer or what the sentence is 'about,' i.e., its 'topic'" (Colomb and Williams, 1990b). Structural linguistics of the late '50's failed to catch on because it tried to define linguistic elements on the basis of their common structural features, a definition that was logically principled but cognitively unreal. Prototype theory also explains why we still hold up as a model a paragraph with an opening "topic" sentence, when we know that most paragraphs do not fit that model (Braddock, Popkin), or why it is not "wrong" to deviate from any of these prototype patterns, but somehow not cost-free. The first principle in the account book of style is that cognitive costs must be repaid by rhetorical benefits, with interest.[10]

The Prototypical Structures of Larger Units of Discourse

Similar principles of prototypical structure underlie larger, multi-sentence, multi-paragraph units of discourse. Each has a prototypically privileged sequence of *fixed* positions and a privileged way of *variably* filling them. The two fixed positional elements in every prototypical unit of discourse are straightforward: Whether that unit is a paragraph, section, or whole, it *prototypically* (*not* invariably or necessarily) consists of (1) a relatively short introductory segment and (2) the rest of that unit. In this paragraph, for example, the first two sentences constitute its positionally

fixed (by definition) introductory segment (1), and the rest of this paragraph, its fixed body (2). That introductory segment could have been just one sentence long, or three or four. The variably placed element in this or any other unit of discourse is its "point," the sentence that expresses the main claim that the rest of a paragraph, section, or whole text supports. That point sentence prototypically appears at the end of whatever counts as the the first element, the introductory segment of its discourse unit. But that point may also appear at the end of the whole unit. While the point sentence is a segment of meaning that is variably located, however, its prototypical position, its "privileged" position, is at the end of the introductory segment (Colomb and Williams,1986; Williams and Colomb).[11] The point of this paragraph, for example, is the second sentence, prototypically appearing at the end of that two-sentence introductory segment:

> Similar principles of structure underlie larger, multi-sentence, multi-paragraph units of discourse. *Each has a privileged sequence of* fixed *positions and a privileged way of* variably *filling them.*

With a little revision, though, I could have moved that sentence to the end of this paragraph, as its summary conclusion:

> So the point sentence is a unit of meaning that is variably located: it can appear at the end of the introductory segment or at the end of the whole unit, but its prototypical position is at the end of the introductory segment. *Thus each unit of discourse has a privileged sequence of fixed positions and a privileged way of variably filling them.*

But had I done that, I would have exacted on you a marginally higher cognitive cost for no apparent benefit that I can at the moment think of.

Here is the formal representation of these relationships.

Fixed	**ISSUE**	**DISCUSSION**
Variable	**POINT**	**(POINT)**

That is a micro-account of all units of discourse. At a higher level of the structure of genres of discourse, the parts have more specific functions. In this study, we are dealing with a genre of discourse that poses PROBLEMS. At the level of that kind of whole discourse, the most obvious fixed and variable levels are these:

Fixed	**INTRODUCTION**	**BODY**
Variable	**PROBLEM**	**SOLUTION**

We open such a discourse by articulating a PROBLEM in its introduction and then we solve it in the body (Jordan, Hoey, Meyer). That is such a natural order that we might think that no other is even possible. But in fact, a good many students articulate both their PROBLEM and their SOLUTION not in their introductions but toward the end of their papers, in the body, because it is there where they discover a problem that might engage them. (More experienced writers will, of course, sometimes develop a PROBLEM in the body of their text as a deliberate rhetorical strategy.)

The Fixed and Variable Bi-level Structure of Introductions

I simply assert that Introductions are now formally conventionalized:

1. They have the same kind of fixed/variable bi-level structure that we find in other units of discourse: a fixed level of privileged sequential positions and conventionalized units of content that can be moved about but have a privileged claim on certain of those positions, and

2. They have all the characteristics that qualify them as representing prototypical linguistic/rhetoric structures.

As we saw with the ozone introductions, the variable units of content consist of PROBLEM (with its two components, CONDITION and COST) followed by a reference to its SOLUTION. These variable units claim privileged positions in a general level of fixed structure.

I will now simply assert (and assume that the following discussion demonstrates) that this fixed level consists of three positions that reflect the structural sequence of a psychological episode (I will describe what I mean by Stasis in a moment; it does not have the usual meaning found in rhetorical studies):

Fixed	**Stasis**	**Disruption**	**Resolution**

This is a specific instance of a more general psychological sequence of the phenomenon of attention – stasis, disruption of stasis in the form of the arousal of an expectation, and fulfillment through the resolution of

disruption and a return to stasis (Kenneth Burke's definition of basic form, incidentally).

We have already accounted for the variable units of content that match DISRUPTION and RESOLUTION: a PROBLEM is the prototypical disruption; its SOLUTION is the prototypical Resolution to the Disruption (note that these terms are not upper-case, because they refer only to the locations, the structural slots, that are filled by actual elements, which we do put in upper-case):

	Introduction			Body
Fixed	**Stasis**	**Disruption**	**Resolution**	
Variable		**Problem**	**Solution**	

If the best kind of rhetorical Disruption is a PROBLEM, then PROBLEM has a privileged claim on the position we call Disruption.[12] And if the best resolution to a PROBLEM is its SOLUTION, then a reference to the SOLUTION has a privileged claim on the Resolution position. The minimal prototype introduction, then, is this:

> [ ] **XXX/Stasis** [(Recently, the thinning of the ozone layer has allowed sunlight to reach the earth unfiltered) **CONDITION**. (As a result, we are going to have more cancer and higher medical costs.) **COST**] **PROBLEM /Disruption** [[We can avoid these consequences only if we ban chemicals that degrade ozone]. **SOLUTION-GIST**] **Resolution**

This kind of bare-bones primitive introduction, however, is not the most common, because the vast majority of introductions open by invoking Stasis in order to establish background, context, particularly the consensus on an issue – any kind of Stasis that can be disrupted. Here is a more typical introduction (I will hereafter ignore the complex bracketing):

> [As scientists have investigated environmental threats, many of their concerns have proved exaggerated, such as the effect of acid rain and the imminence of the Greenhouse Effect.] **CONTEXT/Stasis/** [But recently they have discovered a threat that is all too real: the ozone layer has been thinning, thereby allowing sunlight to reach the earth unfiltered. **CONDITION**. Since unfiltered sunlight causes skin cancer, we will experience higher mortality rates and medical costs. **COST**] **PROBLEM/Disruption** [We can avoid these consequences only if we ban chemicals that degrade ozone.] **SOLUTION-GIST/Resolution**

This short and schematic introduction represents the most common and prototypical introduction: Most begin with opening context to locate readers in a universe of discourse. But more important, the existence of that opening Stasis in this introduction changes how we experience the rhythm of the introduction. The new first sentence invoking Stasis not only dramatically delays Disruption; it creates the context for it.[13]

This new opening establishing Stasis, in fact, creates an effect analogous to one of two strategies that open narratives. The original paragraph, the one that began by directly announcing the ozone hole, opened with a disruption analogous to,

> Once upon a time, the Wolf was lurking behind a tree in the forest, waiting to jump out and surprise little Little Red Riding Hood as she skipped down the forest path on her way to her Grandmother's house.

But the more common narrative strategy is to open with a stable scene that we disrupt:

> Once upon a time, Little Red Riding Hood was skipping down the forest path on her way to her Grandmother's house, when suddenly the Wolf, who had been lurking behind a tree, jumped out and surprised her.

The same two choices are available for introductions to non-narrative texts. We begin with the threat of the ozone hole – the disrupting PROBLEM, or we begin with Stasis, the apparently reassuring knowledge that scientists have been wrong about other threats. *Then* we spring the ozone hole.

In narratives, Stasis is the opening position in which appears information that locates us in time and space and usually introduces major characters: "Once upon a time, there was a magic forest in which lived a girl and a boy who . . . ." In PROBLEM-posing texts, Stasis provides a space that we usually fill with background context in the form of prior research, a generally accepted truth, particularly consensus, etc. but that we can also fill with an anecdote, an historical episode, a bit of data, etc.

But the purpose of Stasis is more than just to contextualize: Stasis intensifies Disruption. Along with Costs, it is the second way that we rhetorically sell our PROBLEM. Most introductions in academic/scholarly/research texts open by invoking some kind of Stasis and then by disrupting it, typically expressed in a "[Stasis] but Y" pattern (see also Swales, 1984, 1985, 1990):

> Everyone thinks time runs only forward_{Stasis}, *but* at the sub-atomic level, it sometimes runs backwards._{Disruption}

In fact, this kind of opening establishment of Stasis/Consensus characterizes roughly two out of every three published articles in the humanities, with the *but* (or its stylistic equivalent, *however, on the other hand*, and so on) followed by a more or less full statement of the disrupting PROBLEM. [14]

There is another variable in this pattern that intensifies the dramatic experience of an introduction. Often, introductions do not do not explicitly state at their end the GIST of the SOLUTION to their PROBLEM, but rather end with a rhetorical gesture whose position has the illocutionary force of a PROMISE that a solution will be forthcoming. Consider the choices for a last sentence:

> We can avoid these consequences if we ban chemicals that degrade ozone.

> We must address this problem, even if it means changing our way of life.

The second sentence does not state the GIST of the SOLUTION, but by its position at the end of the introduction, has the illocutionary effect of promising one. In fact, in some fields, most articles end not with the GIST of a SOLUTION, but with its PROMISE (cf. Swales and Najjar).[15]

If an introduction can end with something other than the GIST of a SOLUTION, this model must allow as a final element in an introduction something more general than SOLUTION. We will call this more general element RESPONSE. We respond to the statement of a PROBLEM with either a statement of the GIST of its SOLUTION or as a PROMISE that such a SOLUTION will appear.

Thus the full model of an introduction to a PROBLEM-posing text:

	Stasis	Disruption	Resolution
Fixed			
Variable	**(Content)**	**Problem** (Denial) Cost Condition	**Response** Gist of Solution / Promise of Solution

This formal account is consonant with a general theory of discourse that reflects the bi-level structure of all other units of discourse, from sentences through whole texts (Colomb and Williams 1986, Williams and Colomb). To that degree, this account of introductions is substantially more robust than one based on observation and categorization unmotivated by any rich conception of underlying structure. It also supports a more general claim that all discourse and all of its sub-units are structured around a fixed level of structures through which we may move variable units of

rhetorical substance (kinds of meaning), and that some of those variable units have privileged claims on certain of the fixed positions. (To be sure, there are minor elements of Introductions that I have not addressed, but they fit into this pattern in obvious ways.[16])

The Structure of Introductions and Story Grammars

In fact, this account of non-narrative prose links it to narrative prose in a way that either subsumes both under a larger formal pattern, or suggests that the strategies of non-narrative prose derive from narrative prose. Story grammars of the kind developed in the last several years account for the kind of naturally occurring narratives such as this (Johnson and Mandler, Mandler, Prince, Rumelhart, Stein and Policastro):

> I was walking down 53rd street last night, when this guy bumps me and asks for a dollar. I was afraid he was going to mug me. I just kept on walking, because there were some people right across the street. I was really relieved when he didn't follow me. I'm not going to walk down 53rd Street at night any more. You just never know what's going to happen these days.

The story grammar model of a "best" story generates as its first element a "Setting," analogous to our Stasis/CONTEXT (I follow Stein and Policastro's model here):

> I was walking down 53rd street last night. . . .

> As scientists have investigated environmental threats, many of their concerns have proved exaggerated, such as the effect of acid rain and the imminence of the Greenhouse Effect.

The next element in a story is an "Active Event," parallel to De-stabilizing CONDITION:

> . . . when this guy bumps me and asks for a dollar.

> But recently they have discovered . . the ozone layer has been thinning . . .

This is followed by an element that evokes "Emotional Reaction," parallel to our COST:

> I was afraid he was going to mug me.

> Unfiltered sunlight causes skin cancer, which will substantially raise mortality . . .

The story grammar continues with "Attempt to Overcome an Obstacle," parallel to our Resolution/SOLUTION:

> I just kept on walking, because there were some people right across the street.

> We must address this problem, even if it means taking steps that will drastically change our way of life.

The Ending of a story includes (a) a protagonist's response to having attained a goal and (b) the consequences of having done so, elements that parallel our common evaluation of what we have sought to accomplish in a text and an invocation of future research or further application of our SOLUTION.

> I was really relieved when he didn't follow me. I'm not going to walk down 53rd Street at night any more.

> In this study, we have demonstrated that the only way to prevent the depletion of the ozone layer is by eliminating . . . But a number of research questions remain unanswered . . .

The last element in a story is its Coda, typically a moral of some kind:

> You just never know what's going to happen these days.

Colomb and Williams (1986) have pointed out that conclusions in discursive prose have a similar element, which they also called Coda, typically consisting of a rhetorical flourish that formally closes the discourse: a quotation, a short anecdote, an epigram, or moral.

We can see how a Conclusion replicates in reverse order the elements of an Introduction if we first note that one of the more complex forms of an introduction includes not only the elements that constitute Stasis - Disruption - Resolution, but also the kind of opening "anecdote" or "fact" or "provocative quotation" suggested by standard rhetoric texts. If we add that to an Introduction,

Opening Anecdote[a] ➡ Stasis[b] ➡ Condition[c] ➡ Cost[d] ➡ Gist of Solution[e]

we can see how the structure of a Conclusion reverses this order: A typical (but not, I think, prototypical) Conclusion opens by restating (or stating for the first time) the Gist of the Solution[e], or the Point of the paper. This is typically followed by a statement of the Point's larger significance, but that larger significance is functionally equivalent to what could have been stated as a Cost[d] in the PROBLEM statement in the Introduction. For example, one more Cost of the hole in the ozone layer might be that unfiltered sunlight

damages ocean plankton in the Southern Hemisphere, thereby disrupting the world's aquatic food-chain. But that is so dramatically distracting, that I might want to set it aside and use it at the end to suggest an added "significance" of the SOLUTION to the PROBLEM.

Following this Cost[d]/Larger Significance is typically a statement of what is still unknown, functionally equivalent to the Condition[c] element in the PROBLEM statement, typically expressed as remaining flawed understanding or incomplete knowledge. Following that (or folded in with it) is an invitation to do further research to resolve the questions left unanswered, which is (admittedly a bit of a stretch) analogous to the kind of Stasis[b] of a research paper that consists of a review of the research already done on a problem. Finally, particularly in belletristic prose, a writer will in the Coda to a Conclusion close the paper by echoing an Opening Anecdote[a] (or fact/metaphor/quotation/etc.). Thus a typical (though far from invariable) structure of a Conclusion mirrors the typical (though again not invariable) structure of an Introduction:

Opening Anecdote[a] ➡ Stasis[b] ➡ Condition[c] ➡ Cost[d] ➡ Gist of Solution[e]

Point[e] ➡ Significance[d] ➡ Left Undone[c] ➡ Needed Research[b] ➡ Echoed Anecdote[a]

Gist of Solution[e] is equivalent to Point[e], Cost[d] is equivalent to Significance[d], Condition[c] equivalent to Left Undone[c], Stasis[b] to Needed Research[b], and Echoed Anecdote[a] to Opening Anecdote[a]. I should emphasize that we may not find all of these elements in any – or even most Conclusions, nor do we find them always in this order. Conclusions are more variable in their structure and manifestation than are Introductions. But I think it is worth noting the parallels between conclusions and the resolutions to stories as represented by story grammars and between conclusions and introductions. Conclusions appear not yet to have evolved complex prototypes.

The relationship between the structure of stories and the structure of introductions to PROBLEM-posing texts is probably not accidental. We have probably derived the conventionalized structure of introductions from that of stories for reasons that are both historical and rhetorical: narrative is the form of discourse that depends fundamentally on patterns of expectation and fulfillment, and the function of an introduction is to create expectations and then fulfill or delay but promise their fulfillment.[17]

Similarly in PROBLEM-posing texts, when we establish Stasis, we create an expectation that we will de-stabilize it. When we do, we create the expectation that we will restore it. No element of discourse is more rhetorically influential than introductions, so it is no surprise that introductions should draw on the same powerful narrative structures that create stories. And it is this same impulse toward narrative drama, I think, that encourages inexperienced writers of non-narrative prose to resist "giving away" in their Introductions the point of their paper (i.e., the GIST of the SOLUTION to their PROBLEM) – "If I do, people will stop reading." It is an impulse rooted in the desire for narrative surprise.

Some Illustrations

I illustrate this pattern more fully with a series of examples. I have condensed all of them to reveal their underlying structural similarities. First, an introduction from an Op-Ed column in the *New York Times* ("True Leadership for the Next Millennium," Paul Kennedy, January 3, 1993, Section, E, p. ll):

[As President-elect Clinton prepares to take office, his concentration on immediate issues would not be surprising. Should the free trade agreement be accepted? [four more questions follow] Add crises, and it would seem that Clinton can focus only on problems at hand.] **CONTEXT/Stasis** [[Yet**DENIAL** politicians must consider global conditions. Immediate crises only manifest how societies respond to change] **CONDITION** [i.e., politicians are not doing this now] [*So what?*] [Unless we grasp the larger picture, we cannot prepare for problems and we will be limited to damage-control when a crisis occurs. But how are we to distinguish the important from the ephemeral? **COST**]] **PROBLEM/Disruption** [We might consider a time when hopes of a new world order were also being overshadowed by fears and paralysis.] **RESPONSE-PROMISE OF SOLUTION/Resolution/**

From an academic article [Ann McMillan. "Fayre Sisters Al" *The Flower and the Leaf* and *The Assembly of Ladies. Tulsa Studies in Women's Literature*, 1 (1982): 27-42]:

[*The Flower and the Leaf* and *The Assembly of Ladies* are poems attributed to Chaucer. . . . Critics have tended to dismiss the poems as metrically unsound and derivative. . .] **CONTEXT/Stasis** [However, . . .in contrast to all the dream-visions and gardens of love from which they derive, these poems have women narrators.] **CONDITION** [*So what?*] [They reflect in their non-traditional uses of traditional themes and images the concerns of

fifteenth-century women. . . . [and] use established traditions in unusual ways to reflect those concerns.] **COST IN THE FORM OF IMPLIED BENEFIT** See ftnt. 6] **PROBLEM/Disruption** [I shall argue that, whether composed by the same poet or not, the two poems taken together constitute variations on the theme of chastity as efficacy.**Resolution/RESPONSE-GIST OF SOLUTION**

The opening paragraph to an in-house business memorandum:

[To date, 11 employees transferred cross-country have asked for help with a job search for their spouses. We have authorized help for six,] **CONTEXT/Stasis** [[but we have no policy for such authorization nor any standard resources for the proposed Spouse Counseling Program.] **CONDITION** [*So what?*] [Since increasing numbers of employees have working spouses, we can anticipate difficulties not only in agreements to transfer but in recruiting new employees.] **COST**] **PROBLEM/Disruption** [I recommend that we retain three firms that can provide job counseling in Los Angeles (Trans-American), Houston (ExecSearch), and New York (Helmes and Kelly, Inc.).] **Resolution/RESPONSE-PROMISE OF SOLUTION**·

And again, the introduction to the student paper that posed a PROBLEM:

[When Corcyra and Corinth disagreed over control of Epidamnus, they went to Athens to ask for help. The Corinthians appealed to Athens' sense of justice, while the Corcyreans appealed to their self-interest. When we think of justice we think of Socrates and Aristotle, so it would be easy to think that the Athenians would side with Corinth.] **CONTEXT/Stasis** [[But**DENIAL** they sided with Corcyra Corcyra] **CONDITION** [*So what?*] We have to understand the values that Athens rejects and accepts, because we could be misled about their real motives when they appeal to justice to defend some of their actions later in the war.] **COST**] **PROBLEM/Disruption** [Athens rejected the Corinthian values of justice, honor, and treaties, and accepted the Corcyrean values of future self-interest.] **Resolution/RESPONSE-GIST OF SOLUTION**

There are a few other features that introductions often display, but they would complicate this model beyond our needs. I simply assert that this model comprises the essential underlying structure to prototypical introductions to PROBLEM-solving texts, a structure informed by the cognitive structure of a problem.

Variety vs. Monotony: PROBLEM-posing vs. Information-Providing

The risk in using these abridged schematic examples is that my analysis may seem to turn them into cookie-cutter introductions. But is there not an analogous underlying "monotony" in the structure of sentences? Most are relentlessly Subject - Verb - Complement. Yet we realize that pattern in so many ways that readers are never conscious of it. The same variation obscures the underlying structure of introductions. I can assert only that in fully developed introductions, this common underlying structure is obscured by the variety of its expression. The opening CONTEXT/Stasis is often spelled out at great length, through quotations, anecdotes, reviews of literature. The PROBLEM is elaborated in a variety of ways. The SOLUTION is hinted at, spelled out, summarized.

One particularly complex variation cycles through what appears to be a prototypical introduction, articulating a PROBLEM and solving it, but then reveals that the apparent SOLUTION/Resolution is in fact a new Stasis that is denied with a disruptive *but* or *however*, and the cycle starts again [from "Can Your Mind Heal Your Body?" *Consumer Reports*, Feb. 1993, p. 107; I condense a bit in the interest of space]:

[[No one would deny that the mind can affect the body's health [examples]]. CONTEXT/Stasis [But DENIAL this tradition has coexisted with a more questionable one: CONDITION [*So what?*] A tradition of self-styled healers, some true believers and some charlatans [have arisen] who have proclaimed that the mind has an almost miraculous power to cure disease. Recently, physicians have developed a new interest in the mind's role in health—and so have entrepreneurs. [examples]. Even worse is the dark side to these claims: If good thoughts can make you well, the logic goes, then bad thoughts might kill you.COST] Putative PROBLEM [In fact, the mind is neither a miracle cure nor a lethal weapon. There is no good evidence that emotional distress predisposes people to cancer. And conversely, there is no evidence that meditating or listening to a special audio tape will make a tumor go away. Such claims are little more than wishful thinking about positive thinking.]GIST OF SOLUTION/Resolution => New CONTEXT/Stasis [But DENIAL [these distortions mask an important medical reality. CONDITION] [*So what?*] [The evidence is growing that thoughts, beliefs, and emotions can have an impact on physical health. And research is showing that relaxation, meditation, hypnosis, biofeedback support groups, and psychotherapy may affect the course of physical illness.] COST in the form of benefit]
PROBLEM/Disruption [The result is a new synthesis in medical theory and

practice that's coming to be known as mind/body medicine.]**RESPONSE-PROMISE OF SOLUTION/Resolution**

(See also Swales 1990.)

In fact, one variation on the prototypical pattern is so radical that it can hide the fact that the writer has a PROBLEM at all. Before we look at that variation, however, we must distinguish introductions that in fact pose no PROBLEM from those that seem not to, but do. Occasionally, we deliberately write not to solve a PROBLEM, but only to provide information that someone might find interesting or useful. Call this genre of text "Information-providing." Here is the full introduction to one such text:

> Research done in the 1950's and 1960's on British copperplate-printed textiles corrected earlier misidentifications of the origins of a great number of fabrics. Most had previously been thought to be French, but the then newly discovered factory record books, which often included printers' names and the price per yard, allowed attributions to be made to as many as nine British printing firms. A recent study of the textiles themselves has yielded information about what they looked like when lengths were sewn together to form a wider piece of cloth.

> Gillian Moss, "British Copperplate-printed Textiles," *The Magazine Antiques* 137.4 (1992): 941

This introduction seems to offer no CONDITION and so therefore no COST, and since it formulates no PROBLEM, it can offer no SOLUTION. Ms. Moss seems to have written this introduction not to pose and solve a PROBLEM, but because she assumed that at least some readers of *The Magazine Antiques* read for information, either because they are grazing for pleasure or because they are looking for specific information to solve a problem of their own. (We could insert "So what?" between the first and second sentences, but it would ask a historical question about the CONDITION to a problem already solved, not to a PROBLEM in the act of being posed for the rest of the text to solve.)

Few scholarly texts are as purely Information-providing as that semi-scholarly one. But while most gesture toward a PROBLEM, the gestures can sometimes be so weak that they only emphasize the absence of an "interesting" PROBLEM, as in this disorganized introduction, a disorder reflected in our inability to locate with confidence a "So what?" between any pair of sentences:

> [The following is a descriptive account of medieval Welsh grammars]
> **PROMISE OF DESCRIPTION/Kind of Resolution**, [which have been largely

passed over by Welsh scholars and are inaccessible to those others who do not read Welsh.] **PROBLEM/Condition** [Like Ælfric's grammar, for instance, the Welsh grammars derive from Latin sources and are equally pedagogic in purpose; unlike Ælfric's they attempt principally to tutor the student in the grammatical principles of his own language. Because they fall so firmly within the tradition of late Latin grammars, it might be claimed that they are unimportant works individually] **Stasis/CONTEXT** [However, **DENIAL** persuaded by the sentiments of such men as R.W. Hunt, who urges us to study the medieval grammars because of their elucidation of the intellectual activity of the period and of others, like Father Dineen, who would have us enlarge our appreciation of the variety and development of the Western grammatical tradition],

COST/Disruption (as a promised benefit) [I would call attention to this little-known vernacular effort.] **PROMISE OF DESCRIPTION/Resolution**

> A.T.E. Matonis, "The Welsh Bardic Grammars and the Western
> Grammatical Tradition," *Modern Philology* 79.2 (1981): 121 - 145.

This introduction comes close to the one about 18th c. fabrics: "Here's something that you probably don't know but I hope you might like to." The only gesture toward the components of PROBLEM is the weakly implied disrupting CONDITION that two scholars have persuaded Matonis that knowledge of Welsh grammars is in fact not trivial. The Cost is stated as a rather tepid BENEFIT: You will learn something about the intellectual activity of the period and appreciate the development of Western grammar – thin intellectual gruel, at best.

We can revise this introduction to get it closer to one that poses a PROBLEM, but at bottom, there is no PROBLEM posed here (I condense and express a future benefit as a current Cost):

> [Medieval Welsh grammars derive from Latin and like Ælfric's, are pedagogical. Because they are in the tradition of late Latin grammars, they seem unimportant.] **CONTEXT/Stasis** [But**DENIAL** while ignored even by scholars who can read Welsh, these grammars, unlike Ælfric's, tutor students in their own language. **CONDITION/Disruption** [*So what?*] So long as we ignore such grammars of the readers' vernacular, we fail to recognize important aspects of the intellectual activity of the period and to appreciate the full development and variety of the Western grammatical tradition. **COST/Disruption**] **PROBLEM** [To fill this gap in our knowledge I offer the following account.] **Resolution/PROMISE OF SOLUTION**

There are, though, two caveats before we can assume that if a PROBLEM is not posed in an introduction, the text does not solve one. First, the community of discourse may share enough knowledge about a topic to

construct a problem/PROBLEM out of the introduction. Here is the shortest introduction I have ever found in published academic writing:

> This paper introduces a new category of Roman amphora. The catalyst for the recognition of the type was the discovery at Pan Sand in the Thames estuary of a specimen with its original contents.

> P.R. Sealey and P.A. Tyers, "Olives from Roman Spain: A Unique Amphora Find in British Waters," The Antiquarian Journal (1989) 69.1, p. 53.

The opening sentence sounds like a PROMISE and the second CONTEXT, a relationship we can see better if we reverse their order:

> In 1987, a Roman amphora with its original contents was discovered at Pan Sand in the Thames estuary. It appears to belong to a hitherto unknown category, which this paper will describe.

But while there still seems to be no obvious PROBLEM here, anyone socialized into an academic community knows that anything new, particularly a new *kind* of thing, is very de-stabilizing: the familiar categories are at least incomplete, perhaps wrong, sufficient to exact unknown COSTS: we will not understand the real relationship among amphoras, perhaps mistaking their development, origins, materials, etc. A prototypical and *explicit* introductory structure would have looked like this (I invent freely):

> [In 1987, another Roman amphora with its original contents intact was discovered at the Pan Sand in the Thames estuary.]CONTEXT/Stasis [But compared to the many amphora found in northern Europe (Skep,1932; Harise, 1936), this specimen does not fit any known category CONDITION/Disruption. [*So what?*] Its singular construction and shape calls into question the history of the Caledonia1-2 categories (Kinahan, 1987) and their distinctions from the Cardiff 3 - 5 types, including genetic relations to other types found rarely in northern Europe but widely in Sicily.COST/Disruption] PROBLEM [In this report, we describe this novel find and propose a new history of Caledonia1-2 amphora.
> PROMISE OF SOLUTION/Resolution

I do not assert that the authors *should* have written an introduction like this, only that when we compare it with the original, we can see that it makes clear how the discovery of a new type of amphora can be explicitly articulated as a PROBLEM with all its necessary components. The authors might reasonably respond that their readership would *know* why a new kind of amphora is important, that stating the COSTS of the CONDITION would be redundant to the point of condescension. And they might be right to do

so. But I will suggest later that for our students (indeed for ourselves and particularly for those of my colleagues who submit papers to journals for whom I referee) there is a distinct value to articulating a PROBLEM in an introduction in its fullest possible way, regardless of what they (or we) think an audience can infer.[18]

There is a second variation to a PROBLEM-posing introduction that makes it seem like an information-providing text . In this case, however, it is not an intentional departure from the prototype introduction: it is, rather, a sign of incompetence or error. The author may articulate a PROBLEM not in the introduction, but in the conclusion, where it was discovered, and left. Here again is one of the introductions about the Corcyreans and Corinthians appeals:

> Just before the outbreak of the Peloponnesian War, the cities of Corcyra and Corinth became involved in a conflict over which of them should control Epidamnus. They could not agree so their ambassadors went to Athens to ask Athens to side with them. After listening to the two speeches and debating among themselves, the Athenians finally decided to support Corcyra. The two speeches differ in many ways, but the most important difference is in the reasons that each side gives to support its appeal for help because the appeals that Athens accepted and rejected can tell us something about Athenian values. In order to show these values, I will first discuss the Corcyrean speech and then the Corinthian speech.

This paper seems to pose no PROBLEM, not because the writer believes that a PROBLEM is inferrable, but because when the writer wrote this introduction, she had only rhetorical problems. However, if at the end of this paper we found a passage like that in the more complex introduction (p. 00), we might conclude that she had finally discovered one:

> Since Athens was the birthplace of Socrates and Aristotle, it would have been easy to think that they would side with justice, but they sided with Corcyra. Once we realize right from the beginning of the war that Athens' basic value isn't justice, but self-interest, we should doubt them when they claim to act justly later in the war. Despite what Athens says later about reasons for their actions, their motive might be just self-interest.

In fact, a text of this form is typical not only of undergraduate papers, but of early drafts of texts of all kinds, including apparently final drafts of papers I not only referee but read in a good many journals. Two of my colleagues and I have consulted with an international management consulting firm that spends months analyzing an industry, its competitors, its market, and a particular client's position in it. Its consultants then create

a presentation that explains to the client what its problems are and how to solve them. No complaint is more common among the senior officers of this firm than that their consultants' presentations are narratives of their investigation and only at the end of the presentation do they reveal the full nature of the problem and its solution. They construct their analysis as a narrative not because they want to surprise the client (though sometimes they do want to do that), but because it was only in the act of creating their presentation that they discovered a solution to a problem that they had not yet entirely posed.

Once we get control of our materials by summarizing them, we are prepared to discover and articulate our PROBLEM, but too often we do it as a last, sometimes desperate act of completion. Having filled up a few pages with that preparation and concluding with a brief statement of a conclusion, our students feel that what they have written looks like a paper, feels like a paper, must be a paper: <<Print>>. I will suggest in Part 3 a way of addressing this problem.

Thus two introductions may seem substantially similar – no apparent CONDITION or COST, thus no PROBLEM and so no apparent SOLUTION. But if we are knowledgeable readers, we experience them in different ways, because we can construct a PROBLEM out of one but not the other. If we can read a PROBLEM out of an introduction, then we can assert that such elliptical introductions have the same *underlying* structure as fuller prototypical introductions, in the same way that we can assert that two apparently different sentences have related *underlying* structures:

> Do all the assignments in the workbook more accurately.

> [You must] do all [of] the assignments [that are] in the workbook more accurately [than someone did all of the assignments that are in the workbook].

In the same way, it is useful to think of *certain* elliptical introductions as having a full underlying "understood" structure, elements of which are deleted (i.e., "understood")[18]. While another introduction may seem substantially similar, however, it might have no such underlying structure.

We ought not be surprised, then, when our students are baffled by highly socialized writing. They are not unskilled readers; they simply do not share enough community knowledge to reconstruct out of elliptical introductions the implicit problem/PROBLEM structures that socialized readers do (MacDonald). Worse, when their own introductions are as short as some they find in professional writing, they cannot see the difference

between their own short and empty introductions and those that are equally short but inexplicit-because-elliptical.

Worse yet, they experience certain difficulties that go beyond even their lack of socialization, difficulties that reflect the phenomenology of the kind of PROBLEM that we typically ask our students to find or invent in academic settings. And perhaps worst of all, they seem not to grasp the fundamental principle that almost all writing that grown-up writers do is devoted to posing and solving PROBLEMS. All that is the subject of Part II.