Chapter 14: Components of Agility

One way to improve an entity's agility is to establish or enhance one or more of the following six components of agility[1] identified[2] in part I of this book:

- versatility[3]
- flexibility
- resilience
- adaptability
- innovativeness
- responsiveness

Understanding each of these components of agility and the ways in which they are related to one another and the overall agility of entities, processes, or systems, is necessary to design, develop, and effectively employ the strategies, approaches, methods, and tools that we need or currently have available to achieve an appropriate level of agility. Appropriate is being driven by the characteristics of the circumstances we face.

The first five of these are related to different kinds of stresses or opportunities, while the last of these, responsiveness, is an essential ingredient when passive measures are insufficient and active agility (anticipatory or reactive) is required.

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[1] I finally settled on the term *component of agility* as an appropriate label for these six capabilities. Previously these six were described in a number of ways. Early on they were referred to as dimensions of agility and later as enablers. More recently they were described as coping mechanisms. Each attempt to find an appropriate term has not, for a variety of reasons, met with lasting success.

[2] The discussion of agility builds on previous discussions in CCRP Publications (makes modifications I now believe appropriate), as well as incorporates the results of meetings of the Focus Convergence and Agility Team, a group of interested members of the C2 Community that meet regularly under the sponsorship of the CCRP. A new NATO Research Group was created in early 2010 to consider C2 agility. This group, SAS-085, is, as this is being written, discussing the definition of agility and building a conceptual model of agility. These discussions have also influenced my treatment of the subject. But since it is impossible to know what the consensus of SAS-085 will be since there final report is not due until 2012 readers should understand that what is written here constitutes my views. (see Acknowledgements)

[3] This component of agility has been previously referred to as robustness.

Responsiveness

While passive agility, as previously explained, does not require an entity to do anything to remain operating within acceptable bounds, this capability is associated only with a limited set of circumstances. That is, when conditions remain within the operating envelope defined by an entity's characteristics. For example, a system may be designed to accommodate a 50 percent increase in communications traffic without experiencing significant impacts to mission or task effectiveness, timeliness, or efficiency. But passive agility has its limits, and when conditions fall outside of the design envelope, the entity can no longer maintain an acceptable level of performance without making some change.

In other words, to remain within or to regain an acceptable level of performance an entity must be active or proactive. Active agility enables an entity to respond in a timely manner and/or anticipate, perhaps even preempt. Active agility requires that an entity recognize that some action is necessary, decide on what action is necessary, and take that action.

Responsiveness is related to the time it takes to recognize and respond to a change or anticipated change in circumstances. A change in circumstances may either represent a stress that can adversely affect the ability of an entity to perform or an opportunity that an entity can seize on to improve performance or effectiveness or maintain performance or effectiveness at a lower cost and/or with less risk.

Figure IV-6, Anatomy of Responsiveness, depicts a number of key concepts related to the relationships between responsiveness and agility. First, it identifies the baseline performance (the dotted line), that is, the performance that would have occurred had the change in circumstances never occurred. Second, it identifies the steps that are necessary to respond and juxtaposes these steps to the changes that might occur in a measure of value that reflects either the performance or effectiveness of the entity. Third, it identifies what actually occurred (the solid line). Fourth, it indicates that a measure of manifest agility is a function of the difference between baseline and actual performance over time (the area between the two lines).

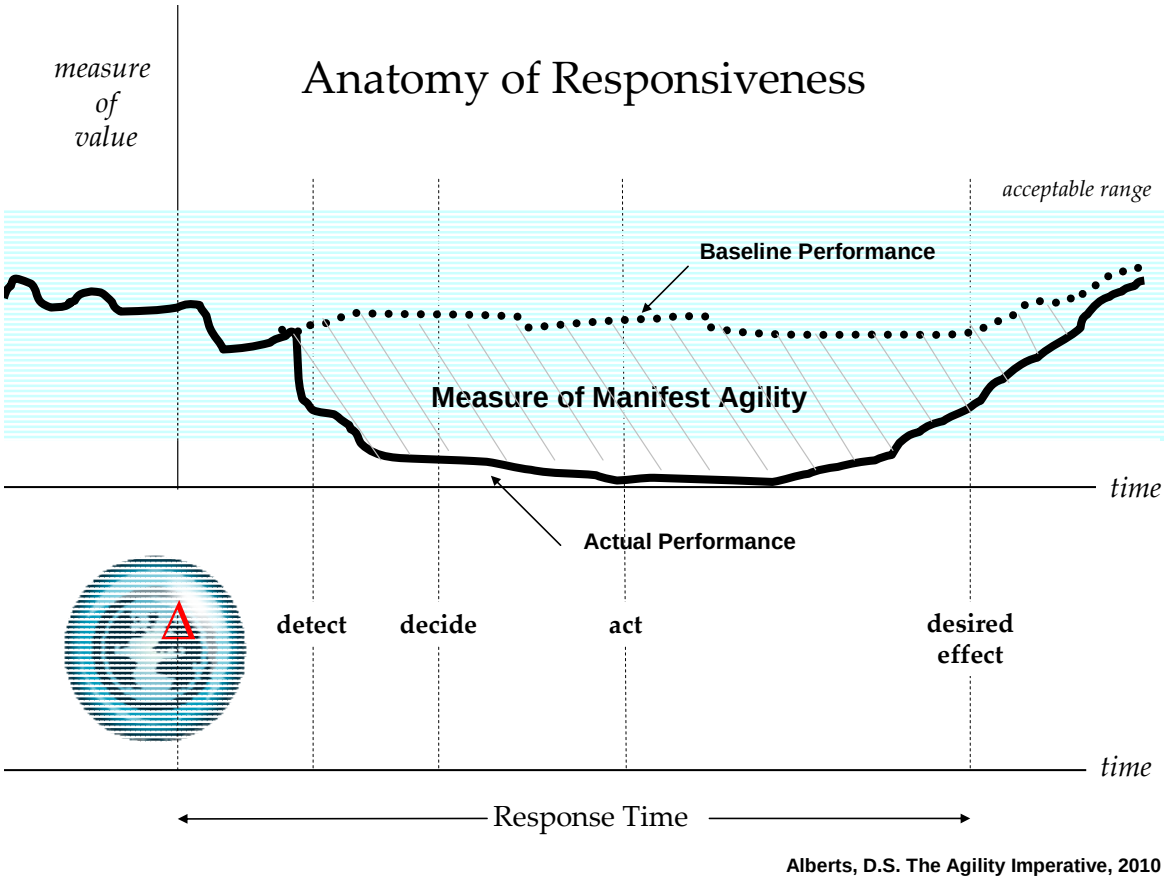

Figure IV-6

The blue-shaded area on the graph on the top of the figure depicts the range of values for performance or effectiveness that have been determined to be acceptable. The time line begins with the situation under control, that is, within acceptable limits. The Greek symbol delta (Δ) indicates a change in circumstances that will either have an adverse impact on the measure of value (related to the level of performance) or present an opportunity to improve value or effectiveness. This change starts the clock for calculating response time.

The first time period of interest is equal to the time it takes to detect this change. During this time-to-detect period, the measure of actual value may or may not change and in fact may even improve. In figure IV-6, the measure of actual value (the solid line) first wanders a bit and then drops precipitously at which time the change is, in fact, detected. How long in practice it takes to detect a change depends on a great many factors. This will be discussed later in the context of agility and complex endeavors.

Once a change in circumstances has been detected, the nature of the change that has occurred needs to be understood and assessed. The entity needs to determine if a response is required, and if so, the most appropriate response from the options available. Going from detection to a decision regarding a response is the sense-making phase of the response process. This time period is a reflection of sense-making responsiveness. In reality, decisions are not all taken at the same instant, but occur over some period of time. Sense-making can be reflexive, almost automatic, or it may involve a considerable amount of information processing, analysis, and problem solving. Depending on the situation, consultation, and collaboration may be an essential part of this process. As a result, the sense-making phase in the response process can take a considerable amount of time and require significant resources.

Once a decision or set of decisions about how to respond has been made, these decisions need to be implemented. Again, this may be quite simple, or it may be logistically challenging. The time required to act is a function of the nature of the actions required and the conditions under which these actions are to be taken. However, having taken action is not the same as having created the desired effects. There may be an instant change in circumstances that results from an action or the effects that will eventually be created may take some time to begin to manifest and have the desired result. In figure IV-6, the value graph depicts a situation where the effects of the actions taken do not manifest themselves immediately. This affects lag results in a situation that remains unacceptable for a period of time before performance or effectiveness is restored to acceptable levels.

The time required to restore the measure of value to an acceptable level (response time) and the adverse impacts that occur during this time period (consequences) depend on the nature of the endeavor, the nature of the stress, and the entity's available response options.

By its actions, an entity can change the shape of the responsiveness curve. As depicted in figure IV-7, an entity can employ a strategy to buy time. Sometimes referred to as temporizing, this approach seeks to accomplish one or more of the following: limit immediate damage; restore, at least in part, some effectiveness; forestall further deterioration; and enhance the effectiveness of later actions. The dashed line in figure VI-7 depicts the results if such a strategy (buying time) were employed.

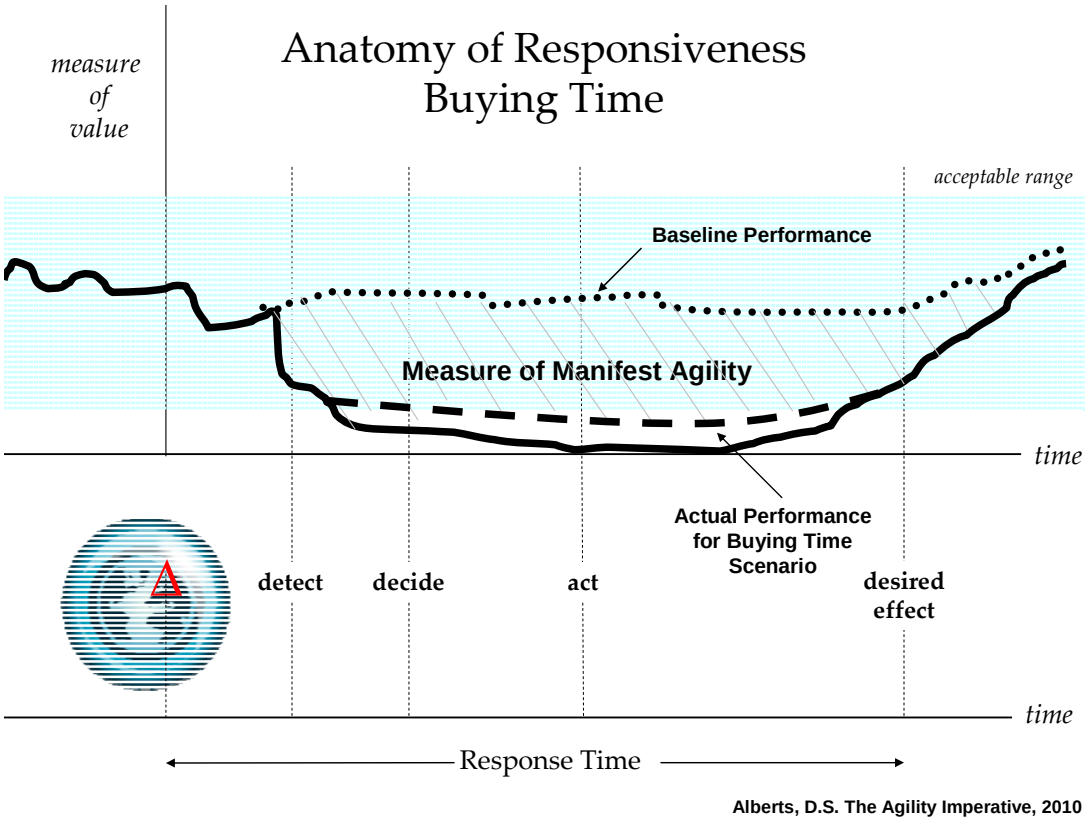

Figure IV-7

Readers should not assume that entities must wait until a change actually occurs to begin to respond. There will be circumstances in which it may be possible to anticipate a change and entities may choose to take one or more actions in anticipation of events. These actions may include going on alert, increasing readiness, and/or taking some preemptive action.

Figure IV-8 depicts the impact that an anticipatory strategy can have, if it is successful (the dashed and dotted line, ●— ●—). The adverse impact associated with this scenario is far less than with simply a buying-time scenario. As depicted in figure IV-8, the ability to anticipate and take effective action prevents effectiveness from being degraded below an acceptable level and hence reduces the response time. Readers should note that, as a result of anticipation, the time required for decisions to be made, action to be taken, and effects to be realized can be reduced. Thus, the impact of anticipation can be more than simply starting the ball rolling earlier. The ball can also roll faster.

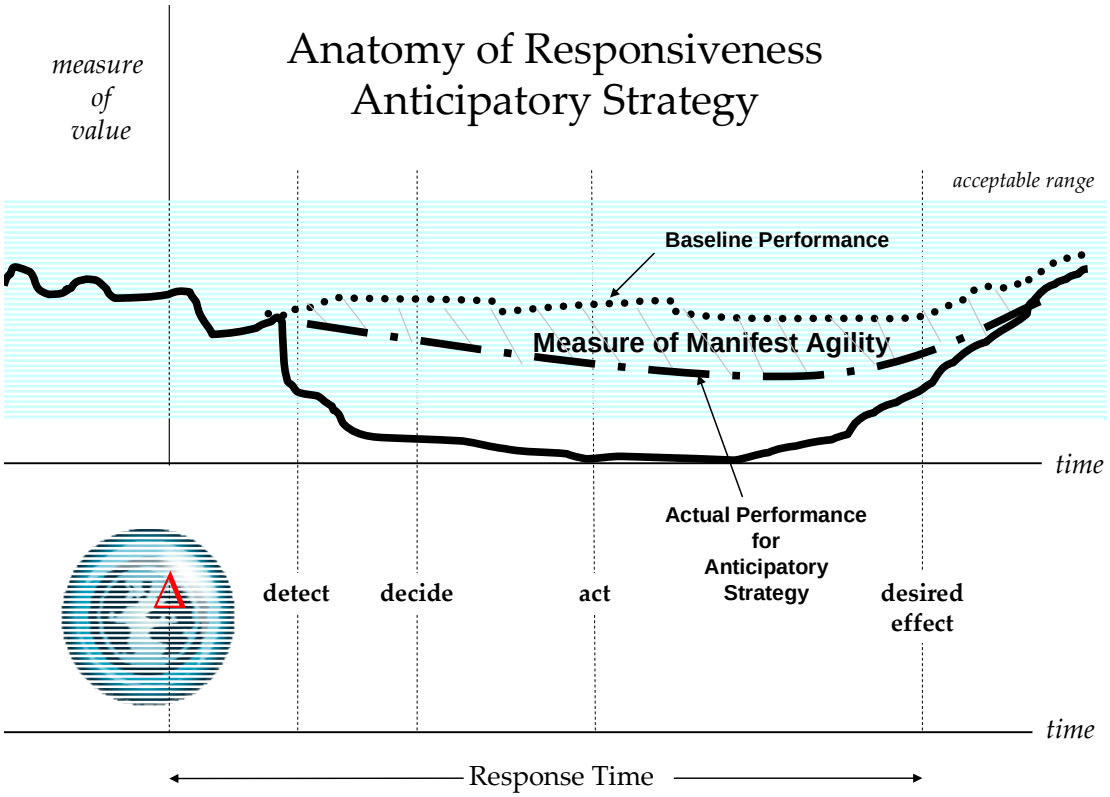

Figure IV-8

There will be times when an event or situation can be avoided or preempted entirely as depicted in figure IV-9.

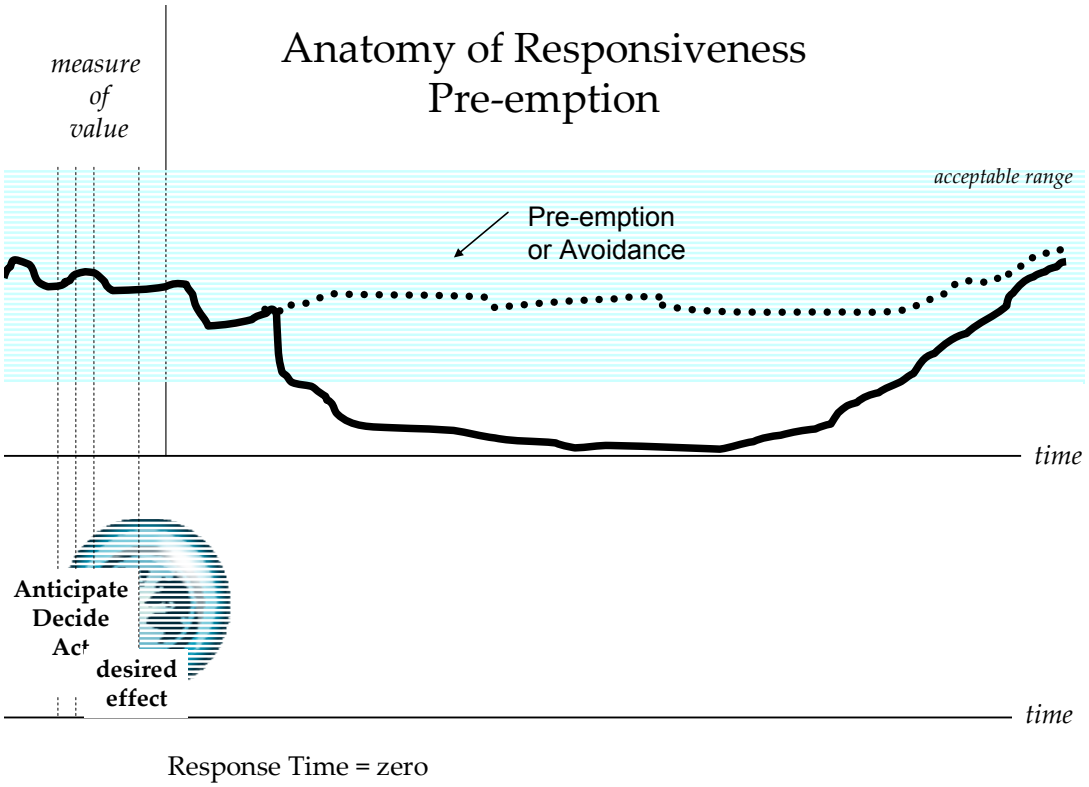

Figure IV-9

In this case, the decision to act, the taking of action, and the effect all take place prior to when the event would have occurred. The curve depicted in this figure represents both the actual time under a successful preemption strategy and the baseline. This baseline, if it were known or could be estimated, could be used to measure how agile the entity was (manifest agility). If the event were prevented, then the effectiveness observed over time could be compared to what would have occurred if the event had taken place and the entity was forced to react given its capabilities. Conversely, if the event actually took place, the actual experience could be compared to the baseline to see how much effectiveness was degraded for how long and compared to an estimate of what it would have been had the entity been unable to cope or respond effectively.

Developing a series of response curves as depicted above can provide important information and insights that can be used to better understand the impact of various response strategies and inform agility-related investment decisions. They can also provide information that can be used to measure the manifest and/or potential agility of the entity in question. If the curves are based on actual experience, then they depict manifest agility. If they are based on results from

experiments, analyses, or simulations, they would contribute to an assessment of potential agility.

Responsiveness, while necessary, is not sufficient in of itself to make an entity agile; it must be paired with one or more of the other properties associated with agility (versatility, flexibility, resilience, innovativeness, and adaptation). Thus, to be agile an entity must both be responsive (respond in a timely manner) and effective in that response. The tradeoff between response time and the nature of the response that can be mustered is one of the critical considerations in developing or improving an entity's agility.

There are a number of words that have been used to refer to or to explain a lack of responsiveness. The words inertia and resistance have such a meaning. Inertia comes from the Latin *iners*, meaning idle or lazy. One speaks of a resistance to change or a resistance to act. If an entity possesses either property, it would presumably show up in a manifested lack of responsiveness and depending on the associations that attend to the word, the property of resistance would also be manifested in a lack of flexibility, a lack of adaptiveness, and so forth. SAS-085 is currently undertaking a series of case studies and conducting a series of experiments and analyses designed to improve our understanding of agility and to inform the development of a conceptual model that builds on previous work. During these discussions various members have proposed their own models or views of agility and the variables that they think are important. One such model, based conceptually on control theory, suggests that resistance is an important variable that should be operationally defined and measured[4]. Given the similarities and overlaps in the meanings of the many English words that are associated with some aspect of agility or lack thereof, the approach I have taken is to find a minimum set that captures the ideas and work with others to map other words to one or more of this minimum set. At this point, I believe that the components of agility identified here constitute a complete set as they have been defined. The SAS-085 case studies and experiments are designed to test whether or not the behaviors they observed can be adequately described by these components of agility. They are also working on their own version of a Rosetta Stone. Given that no plan survives first contact with reality, I expect there will be modifications to the conceptual model presented in this book, and that only after a considerable amount of work has been done improving our understanding of

[4] The SAS-085 member that first advocated the inclusion of the variable resistance (and also stiffness) is Phil Farrell from DRDC Canada. This work has not yet matured.

agility in different contexts will there be a semblance of convergence with regard to the language of agility.

The following five components of agility, when combined with the ability to respond in a timely manner, account for the various ways that an entity can cope with and/or exploit changes in circumstances.[5]

Versatility (previously robustness[6])

Event: The nature of the mission or task changes in significant ways

This component of agility permits the entity to achieve an acceptable level of performance or effectiveness in accomplishing the new or significantly altered task or mission.

The nature of complex endeavors places almost all entities into situations that are, at least in part, new and unfamiliar. More often that not the mission or task that an entity is prepared to undertake is not the mission or task that is actually required. Although known by some in advance, this realization often comes after the entity is engaged in a complex endeavor and requires that the entity take on what they consider to be a new or changed mission or task. In the past, there has been considerable resistance on the part of some military organizations to accept this responsibility, which they have dubbed *mission creep*.[7] This is an aspect of a

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[5] This is, of course, a hypothesis at this point.

[6] The term that was originally selected to convey the idea of being able to successfully take on a new or altered task or mission was robustness. This choice of words came from the idea of having a robust capability across the mission space. Given that the word robust conveys a number of meanings and, as a result, has caused some confusion, I have decided to use the word versatile instead. http://www.merriam-webster.com/dictionary/versatile Etymology: French or Latin; French, from Latin *versatilis* turning easily, from *versare* to turn, frequentative of *vertere* Date: 1605 **1 :** changing or fluctuating readily **:** VARIABLE <a versatile disposition> **2 :** embracing a variety of subjects, fields, or skills; *also* **:** turning with ease from one thing to another **3 a** (1) **:** capable of turning forward or backward **:** REVERSIBLE <a versatile toe of a bird> (2) **:** capable of moving laterally and up and down <versatile antennae> **b** *of an anther* **:** having the filaments attached at or near the middle so as to swing freely **4 :** having many uses or applications <versatile building material>.

[7] For a discussion of this topic see Siegel, Adam, "Mission Creep or Mission Misunderstood," published in *Joint Forces Quarterly* - Summer 2000 http://www.dtic.mil/doctrine/jel/jfq_pubs/1825.pdf.

lack of agility that is not confined to military institutions. The same term has been used to describe an analogous situation in economics.[8]

Having chosen here to use the term versatility instead of robustness, the question arises whether there is a meaning that was attributed to robustness that is not included in versatility. In the initial discussions of agility found in information age transformation, the term robustness was initially defined to include more than changes in missions and tasks. Specifically, robustness was defined as the ability to maintain effectiveness across a broad range of missions or tasks, circumstances, and conditions. It includes the ability to maintain effectiveness under attack and when damaged and/or degraded, as well as across the spectrum of conflict. By 2003, as reflected in *Power to the Edge*, which devoted a full chapter to agility, resilience was split out from robustness. This left robustness to include changes in missions or tasks, as well as a catch-all—circumstances. Given that the word *circumstances* is part of the simple definition, and that resilience, flexibility, innovativeness, and adaptiveness all are about particular sets of circumstances, it really does not make sense to include circumstances as a catch-all in the definition of robustness. Hence I have limited my definition of versatility to changes in missions and tasks. I have omitted a reference to the spectrum of conflict because it was merely an example in a military context and is covered more generally in missions and tasks. After this discussion of the components of agility, I will examine whether or not any additional components are needed, and if so, what they are.

Flexibility

Event: The response to the situation selected by the entity cannot be implemented, does not work, or does not work well enough in a particular situation.

This may be a result of a related stress (damage incurred), a lack of available information or expertise, a perception on the part of a partner or a third party, or it may be the result of an adversary's decision or action.

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[8] For a discussion of mission creep in the economic domain, see Hockett, Robert, "Mission Creep: Defending the IMF's Emerging Concern with the Infrastructural Prerequisites to Global Financial Stability – 2006" http://scholarship.law.cornell.edu/cgi/viewcontent.cgi?article=1061&context=lsrp_papers.

Flexibility provides an entity with more than one way of accomplishing a given task. This permits the entity to try another response instead of having to stick with an ineffectual, infeasible, or preempted response. Having to move to a less-preferred option or an alternate response may not yield the same results (had the original response been successful), may have some undesirable side effects that the preferred option did not have, and/or may not be as cost effective as the preferred approach; but having one or more alternatives is, nevertheless, better than not being able to do anything but continue with a doomed-to-failure course of action.

There are many examples of flexibility in the context of equipment, systems, processes, and organization. Flexibility requires both a recognition that a preferred option is not working or will not work and the availability of alternatives. In many cases, these alternatives have not been specified or planned for in advance but are identified as workarounds by individuals.

For example, having a face-to-face meeting may be the preferred approach to reach agreement on an assessment of the situation or on a collaborative course of action, but if such a meeting is impractical in the time frame required, having the ability to hold an Internet meeting or a video conference may be more effective than a telephone conference or a meeting of a subset of individuals or organizations or no meeting at all.

Resilience

Event: The destruction, interruption, or degradation of an entity capability. This may be as a result of an action by an adversary, an act of nature, a self-inflicted wound, an accident, or an inevitable result of complexity.

Resilience provides an entity with the ability to repair, replace, patch, or otherwise reconstitute lost capability or performance (and hence effectiveness), at least in part and over time, from misfortune, damage, or a destabilizing perturbation in the environment.

Examples of either design decisions that contribute to resilience are: redundant components, excess capacity, reserves, and fault-tolerant designs and systems. These are all passive and reflexive ways to improve resilience. A rapid response maintenance capability is an example of an active capability.

Innovativeness

Event: A situation for which the entity has no known adequate response.

The property of innovativeness permits the entity to generate or develop a new tactic or way of accomplishing something—a discovery or invention.

Adaptability

Event: A mission challenge that an entity, by its very nature or by its established organization or processes, is ill structured to undertake.

Adaptation permits an entity to change itself, that is, to change its organization, processes, and/or structure to become better suited for the challenge.

Interactions and Synergies Between and Among the Components of Agility

As pointed out earlier, the degree of responsiveness an entity possesses directly impacts the efficacy of the other components of agility. This is because an entity's responsiveness determines the time budget available and because behaviors that increase responsiveness also contribute to agility. The following example illustrates how responsiveness directly impacts flexibility, innovativeness, and resilience, either by constraining these components or enhancing them.

Flexibility provides an entity with more than one way of accomplishing a task. This permits the entity to try another response instead of having to stick with an ineffectual, infeasible, or preempted response. The amount of time available is directly related to both how many of the available ways are feasible (the option set) and how many different options can be explored and, if necessary, tried. An entity's ability to anticipate can enhance flexibility by both increasing the time budget available. The intelligence community has made enormous investments in what they refer to as *I&W* or indications and warnings. The purpose of I&W is to focus attention in the right place and to buy time. Success here depends not only on having the technical means (sensors and other collections systems) but also on the ability to analyze the data collected, share it appropriately, and make sense of it. The right set of metrics points one in the right direction to look for

either things that have happened or, in many cases, things that have not happened. I&W enhance the ability to anticipate and hence prepare.

On the other hand, a lack of I&W means that the earliest one would be aware of a problematic event would be when the event actually takes place, is subsequently observed, and the information transmitted to an appropriate individual or organization. The failure to anticipate may take some options off the table because the time needed to exercise these options may not be available, making them infeasible.

Innovation permits an entity to generate or develop a new tactic or way of accomplishing something, that is, a discovery or invention. Having a sufficient amount of time can contribute to one's ability to innovate, assuming that the other conditions for innovation are present, because coming up with something new usually takes more time than to implement an existing option or plan. Innovation, in turn, can contribute to flexibility by providing an option not previously available.

The lack of innovativeness severely constrains flexibility by limiting the response set to pre-identified options. Given the profound uncertainty and inability to adequately predict that is characteristic of the situations of interest here, it is not reasonable to expect that the all the options one would need would have been previously identified. This is, of course, not a new problem. The often-quoted saying that No plan survives first contact with the enemy is evidence of some recognition of this problem. However, despite this awareness, military organizations remain committed to planning processes that stress the expected rather than preparing for the unexpected.

Resilience provides an entity with the ability to recover from some damage or degradation. Having more time can also contribute to resilience by providing more of an opportunity to take steps to avoid the damage or mitigate the damage that would otherwise result from an event. There are many cases when, without anticipation, there is simply not enough time to react. Waiting to respond to a cyberattack on an information or communications system until some human becomes aware of the attack and responds in human time puts one at a decided disadvantage.

In addition to responsiveness directly affecting the other components of agility, these components can affect each other. For example, resilience impacts flexibility since the adverse impact of an event can make some, previously

available options infeasible as a result of a lack of required capability (communications) or resource (personnel or equipment). Resilience can, at least to some degree, prevent this from occurring and keep more options on the table.

Given the interdependencies between and among the components of agility, one can better understand why the language of agility differs widely across individuals and disciplines. Fortunately, the ideas themselves do not differ as much as they appear to. If one is willing to look past the labels attached to the ideas behind the labels, the chance to develop widely shared understandings among disparate groups will be enhanced.

Inhibitors of Agility

There are, of course, a number of reasons for a lack of agility. Sometimes to improve our agility, we do not need to take action; rather, we need to stop doing something we are currently doing. This is because a failure to be agile can be traced not only to a failure to develop or improve the capabilities that enable agility, but it can also be traced to a set of characteristics and behaviors that inhibit agility. These inhibitors of agility include:

- an unrealistic, overly simplistic model of reality
- a narrow view of self
- confidence that the best approach is known (knowable)
- restrictions on access to information
- stove-piped organizations
- reliance on approved planning scenarios and models
- optimized processes and investments
- resistance to change
- lack of diversity
- risk intolerance
- fear of failure
- lack of basic research
- lack of adequate education and training
- disincentives
- lack of diversity

Armed with only my observations of a wide variety of organizations over decades and the logical implications of the conceptual model of agility presented

in this book, I am prepared to assert that the individuals and organizations that exhibit one or more of these characteristics and behaviors have been designed to fail. While possessing even one of these inhibitors may, under the right set of circumstances, contribute to failure, the more of these inhibitors of agility that an organization or collective possesses, the more likely it is that they will fail and fail catastrophically.

Readers need only look at case studies of the high profile failures that have occurred in recent years that involve organizations that were widely perceived as being successful to find evidence that supports this assertion. A closer look at any one of these examples will, I believe, uncover one or more of the behaviors identified above.

For example, the U.S. difficulties in Iraq and Afghanistan can be traced to both civilian and military organizations possessing, at least to some degree, virtually all the characteristics and behaviors identified above. Their widely discussed set of assumptions regarding what would happen after Saddam was disposed certainly were, in fact, unrealistic and overly simplified. A lack of information sharing within, with coalition partners, and with the Iraqis was systemic; the myopic view of self prevented building an appropriate coalition or collective; and the resistance to making the changes necessary (stay the course, etc.) delayed critical course corrections.

Another example is the U.S. military's lack of command and control agility. Among the characteristics and behaviors that have made it difficult for the United States to understand and embrace appropriate approaches to collective action are their inability to imagine nonhierarchical approaches to accomplishing the functions they associated with command and control, their localized sense of self, their belief that they are good at what they do (if not the best), their excessively stove-piped organizations, and the disincentives to joint behaviors that are a result of culture and promotion policies.

The high profile set of what have been called intelligence failures that have occurred in recent years has generally been traced to a failure to connect the dots. That is, in hindsight, the information that was needed to identify and prevent terrorist attacks was available but was not known to the right individuals and organizations or, for other reasons, its significance was not understood. In a sense, these failures can be characterized as a lack of I&W agility. This lack of agility has been attributed to the intelligence community's failure to transform itself from a cold war institution to one that is designed to meet today's

challenges. In recent years, progress has certainly been made, but this task is being made extremely difficult because of the presence of a number of the characteristics and behaviors that inhibit change to self. The connect-the-dots problem, while often associated with a lamented lack of systems capabilities, is not primarily a technical problem. Rather this problem is due to prevailing culture, incentives, and organizational structure and policy.

The failings are, of course, not limited to the military. The same set of challenges and some of the same inhibitors have been noted in economic development efforts. Serrat notes that development is a complex, adaptive process that has, with few exceptions, been approached and conducted in a traditional, linear fashion based on limited and out-of-date insights, and wishful assumptions. He notes that "if the assumptions are based on invalid theories of change (including causes and effect relationships) and on inappropriate tools, methods, and approaches derived from those, development agencies jeopardize the impacts they seek to realize."[9] Serrat builds on the efforts of Showden and Boone[10] to identify the danger signals to look for in different decision contexts. In simple contexts, with established good practice, a context that is appropriate for trained but not expert personnel, these danger signals include: 1) complacency and comfort, 2) desire to make complex problems simple, 3) ingrained thinking, and 4) overreliance on good practice if the context shifts to a complicated or complex one. In complicated contexts, where experts are required, the danger signals include: 1) overconfidence in their own solutions and the efficacy of past solutions, 2) analysis paralysis, expert panels, and 3) exclusion of views of nonexperts. Those faced with complex contexts may exhibit the following danger signals: 1) temptation to fall back into habitual command and control mode,[11] 2) temptation to look for facts rather than allow patterns to emerge, and 3) desire for accelerated resolution of problems or exploitation of opportunities. In what the authors characterize as chaotic contexts (and I would include as part of complex endeavors) the following danger signals were identified: 1) applying a command-and-control approach longer than needed, 2) cult of the leader, and 3) missed opportunity for innovation.

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[9] Olivier Serrat, "Understanding Complexity," *Knowledge Solutions* November 2009, 66 (oserrat@adb.org).

[10] David Snowden and Mary Boone, "A Leader's Framework for Decision Making," *Harvard Business Review*, November 2007, 69-76.

[11] This is an exact quote. I find this observation very interesting since it offers some insights into how others perceive the term command and control.

Thus, there appears to be ample opportunity to observe and note that in diverse fields of endeavor, the level of complexity present in their environments is beginning to, or has already, overwhelmed practitioners and experts alike. Furthermore, the response of many of the individuals and organizations involved exhibit at least one, if not more of the inhibitors of agility identified above.

Requisite Agility

Agility is a desirable capability but that does not mean that it makes sense to devote unlimited resources to achieve whatever level of agility may be possible. The level of agility that is desirable depends on the set of circumstances we face; we refer to this level of agility as *requisite agility*. This is the level of agility that will, if we achieve it, 1) allow us to prevent or minimize the probability of events that are associated with adverse impacts and to maximize the probability of events that offer us opportunities, and 2) minimize the costs and/or maximize the gains should these events occur. Thus, agility is about both the mitigation of any adverse impacts that are created and seizing any opportunities that may arise.

The reader should note that achieving requisite agility is not a guarantee of success, but rather it significantly improves the probability of success. Requisite agility, by definition, gives us our best chance of successfully coping/exploiting since the analysis that determines how much agility is desirable includes a consideration of costs—both the costs associated with residual uncertainties and the adverse impacts that may result, and the costs of achieving this level of protection from risk.[12]

Agility is power. The power of agility manifests itself in the increased effectiveness and efficiency of all aspects of enterprises—materiel, systems, processes, structures, and individuals. But, of all these contributors to agility, this new source of power lies, not in information per se, but in the nature of the relationships that are possible between and among entities.

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[12] This definition of requisite agility represents a refinement of the way requisite agility has been explained previously. This term, suggested by Professor Reiner Huber and adopted by NATO Research Group (SAS-065) that developed the *NATO NEC C2 Maturity Model*, defines requisite agility as that which is required by the situation and does not explicitly discuss the inclusion of a cost-benefit calculation.