DURING THE MID-1980s, the entire American defense establishment was reconstructing its sense of professional identity after Vietnam. The all-volunteer force and a decade of budget shortfalls, equipment shortages, and maintenance problems ensued. Debilitating racial and substance abuse problems eviscerated all four services from within. New Abrams main battle tanks, Bradley infantry fighting vehicles, and Apache attack helicopters rolled off assembly lines and steadily replaced the Vietnam-era M60-series tanks, M113-series armored personnel carriers, and Cobras. This was a result of an intellectual renaissance at the highest levels of Army leadership as well as an infusion of money into defense industry coffers by an administration elected on a strong national security platform. The renaissance generated a paradigm shift in the way the Army thought about how to fight and win a war against the Soviet Union in central Europe.

In 1974, in the aftermath of the Yom Kippur War, a U.S. Army general stood on a windswept hill in Israel and surveyed a vast expanse of wrecked Syrian tanks and armored personnel carriers littering the desert. The Israeli Defense Force had used American equipment—including American-made antitank guided missiles—to defeat a much larger Syrian armored and mechanized infantry force that had relied on Soviet-made hardware and Soviet-style tactics. The Israelis had demonstrated how effective army and air force coordination could disrupt follow-on forces with fighter-bombers and helicopters while tanks and missile-equipped mechanized infantry stopped the first wave of armor. The American general hoped he could use the lessons of the Yom Kippur War to devise a set of core doctrinal concepts to reframe the way the Army used its equipment and define requirements for its next generation hardware. Thus began the process that resulted in one of the most significant re-imaginings of Army doctrine in the 20th century: the 1976 and 1982 editions of FM 100-5, *Operations*.¹
By the time I pinned on my gold second lieutenant bars in May 1985, the new doctrine had a name—AirLand Battle—and four imperatives to guide thinking at the operational and tactical levels of planning: agility, initiative, depth, and synchronization. Although the Fulda Gap face-off between Soviet and NATO forces never took place, AirLand Battle doctrinal imperatives provided the blueprint for Army tactical successes in the 1991 Gulf War and the “shock and awe” campaign of the 2003 invasion of Iraq.

The ideological impact of the 1982 AirLand Battle imperatives on my generation of Army officers is so pronounced that it is easy to underestimate the revolutionary nature of the doctrine that preceded it—the 1976 Active Defense doctrine. Even though AirLand Battle quickly superseded Active Defense doctrine, we should not forget that the primary author of the 1976 doctrine, General William DePuy, was a transformational leader in the doctrinal development process.

DePuy identified a wicked problem, designed a conversation to address that problem, initiated a process that gave the Army an opportunity to exemplify the attributes of a learning organization, and affected the organization in lasting positive ways. DePuy articulated a clear, appealing vision; explained how the vision could be attained; remained confident and optimistic; expressed confidence in subordinates; used dramatic, symbolic actions to focus his organization on core values, and (always) led by example. In doing so, he infused the Army with moral purpose during an institutional evolution that culminated in the Department of the Army’s publication of the new manual.

This article uses a framework offered by conversational theorist Paul Pangaro to argue that General DePuy saw doctrine development as a wicked problem and then designed a conversation within the Army that continues today. It also leverages Peter Senge’s and C. West Churchman’s theories of the “learning organization” to show that the doctrinal...
development process General DePuy started and led changed the Army. He revealed it as a learning organization by giving the institution an opportunity to exemplify its qualities. Finally, the article examines how General DePuy revealed the intrinsic moral content of doctrine. (The 1976 edition of FM 100-5 inspired Army leaders to conceptualize a morally purposed doctrine for the future.)

Wicked Problem, Continuing Conversation

Organizational theorists Michael Harmon and Richard Mayer define wicked problems as “problems with no solutions, only temporary and imperfect resolutions [such as] the location of a freeway or the confrontation with crime.” Although wicked problems are difficult to define, organizational theorist Nancy Eggert notes that “they are not hopeless, nor are they impossible to define.” However, they do require mental agility on the part of leaders, managers, and policy makers, for, as Harmon and Mayer note, “because of their uniqueness, wicked problems are not amenable to standardized routines for analysis and evaluation.” In order to “tame these wicked problems, to define and frame the issues,” leaders, managers, and policy makers must acknowledge that “various theoretical approaches frame the same situations in different ways, ask differing questions about them, and suggest different solutions or preferred modes of action for contending with them.”

In contrast to wicked problems, tame problems are discrete, “malleable” problems that “could be attacked with common sense and ingenuity, [easily] defined and separated from other problems and from their environment [such as paving roads or connecting sewers].” Although a tame problem may be “difficult, time consuming, or complex,” it usually has a “primarily technical” solution—no matter how large in scale. A good example of a tame (although complex) problem was the problem of how to land a man on the moon and return him to earth. Although NASA proved itself quite adept at tackling the tame problem of accomplishing President Kennedy’s stated goal, it was (and, for that matter, still is) less adept at solving the wicked problem of identifying the moral purpose of the U.S. human spaceflight program.

When General DePuy became the first commander of the newly created U.S. Army Training and Doctrine Command (TRADOC) on 1 July 1973, he realized that developing tactics, techniques, and procedures to attack enemy capabilities was a tame problem. Not so designing doctrine to describe how the Army fights, trains and educates its soldiers, chooses weapon systems, and relates to its sister services and national defense policy. Wisely, DePuy started a conversation within the Army that enabled leaders with competing interests and agendas to see the logic in integrating discussions of tactics, training, procurement, and other subjects.

Pangaro notes that attacking a tame problem is merely a matter of designing an iterative and evaluative conversation to agree on goals and means. Designing a conversation to attack a wicked problem is much more complex. Pangaro posits the necessity of a “conversation to design the designing” or “create a new language” to enable the organization to begin a conversation it had never had before. DePuy’s design was remarkable for the way it used old terms in new ways. It enabled leaders to create a new language to describe new phenomena that the Army had never dealt with in an analytical way before.

One can argue that the entire philosophical base for DePuy’s then-new term “Active Defense” was the World War II-era concept of “overwatch,” which DePuy had learned from one of his mentors, General Hamilton Howze. General Howze “recognized that suppressive fire was the best way to neutralize enemy fires so that decisive maneuvers could take place.” Howze coined the term “overwatch” to describe tank-only maneuvers as well as larger combined arms formations in which tanks advanced “under the ‘overwatching’ direct fire of other tanks, which were [ideally in] stationary positions.”

DePuy’s Active Defense doctrine emphasized the
requirement to “ensure the delivery of suppressive fire against an enemy so that the element engaged by that enemy could maneuver.”15 DePuy envisioned a European war in which the enemy outnumbered NATO forces by at least three to one. He saw tactical agility as essential for U.S. operations that emphasized defending as far forward as possible in a densely populated area and with no opportunity to trade space for time.16

The operational level concept of “forward defense” was congruent with and inspired by a West German doctrinal manual roughly equivalent to FM 100-5, in which the German Army emphasized “thorough preparation of terrain, flexibility to allow rapid shifting of the main point of effort, organization in width and depth, a willingness to take risk in some sectors in order to concentrate in others, and if possible, the deployment of mobile forces in an aggressive delaying action forward of the defensive area to buy time and determine the attacker’s main effort.”17

The German notion of panzergrenadier also guided DePuy’s thinking about the relationship of infantry to armor. The term denoted infantry soldiers who rode into battle alongside tanks in armored vehicles from which they could also fight. DePuy borrowed from the Germans the implicit assumption that armor and infantry must be trained, educated, and employed together, along with artillery, air defense weapons, and even aircraft. (This last notion broadened the conversation to include the U.S. Air Force.) In fact, the 1976 edition of FM 100-5 was the first official Army document to include the term that the Army later selected to describe the doctrine that replaced Active Defense—“AirLand Battle,” at the time hyphenated as “Air-Land Battle.”18

The October 1973 Yom Kippur War between Israel and the combined forces of Egypt and Syria crystallized DePuy’s notion that the U.S. Army was at a critical point in terms of its ability to reframe its core assumptions about war in general and war against the Soviets in Europe in particular. While
aiming to fight and win the first battle of the next war was not a new idea in military history, it was not the way the United States waged war in the early 1970s. Despite the demonstrated cost of unpreparedness during the early stages of the Korean War, the U.S. Army still clung to a force generation model which assumed the United States would have time to engage in a World War II-style industrial and manpower mobilization—an event that increasing Soviet capabilities and the deplorable state of U.S. forces in Europe made increasingly remote.

After talking to U.S. Army analysts and seeing the aftermath of the Yom Kippur War with his own eyes, DePuy spoke with Israeli officers about their experience during the fighting, examined captured Soviet-made tanks and other armored vehicles, and concluded that, in a European War, “U.S. forces would have to concentrate against the enemy’s main force and defeat it quickly.”

DePuy assumed that “involved governments would attempt to bring any such clash [in Europe] under control before it ignited into a world or nuclear war and that the rapid consumption rates of battle would disallow prolonged fighting,” DePuy realized that “the equipping and training bases of the Army would have to posture themselves along with the combat developers to assume, contrary to decades of previous thinking based on historical precedent that no longer applied, that the Army would have to win the first engagements of such a war so that the settlement would be favorable to U.S. interests.”

The new assumptions made it necessary to envision a new vehicle for the infantry that could provide “equivalent mobility [with tanks] and armored protection so that they could move with and fight alongside the tanks using automatic small arms fire to suppress enemy antitank-capable infantry such as that encountered by the Israelis.”

DePuy also realized that Army leaders at all levels had to renounce linear thinking about even basic formations of tanks and infantry, “abandon all thought of arranging their vehicles in geometric patterns . . . and, instead, have them flow across the ground in the configuration that would best exploit the available cover and concealment of terrain.”

DePuy believed the Yom Kippur War demonstrated that, to “maintain rapid movement, armored units would have to be prepared to suppress the enemy, that is, to return heavy fire immediately to destroy him at best and at least to disrupt his fire. Ideally, [with] . . . tank and mechanized infantry . . . overwatching . . . from stationary covered and concealed positions . . .”

The preceding discussion shows General DePuy beginning a new conversation about a new reality in warfare, using the empirical evidence of the Yom Kippur War to validate theoretical concepts he had been developing throughout his career. He also used old terms such as “panzergrenadier” in new ways and invented new language such as “AirLand Battle” to describe a new reality of the operating environment.

In short, DePuy initiated a paradigm shift in U.S. Army thinking about the relationship between procurement, training, education, and force employment. He recognized the wicked nature of the doctrinal development problem. The conversation he started continues today as Army leaders struggle to define the Army’s role in ever-more nonlinear and multifaceted conflict environments.

The Army as a Learning Organization

Drawing upon studies that began as early as 1973 (the year DePuy assumed command of TRADOC), organizational theory researcher Graham Leicester described “the constant tension between the pressing need to learn and the obstacles to learning,” at both the individual and the organizational levels.

Learning organization theory became widely popular in 1990 with the advent of MIT Professor Peter Senge’s highly influential work entitled *The Fifth Discipline*. Senge posits five “disciplines”
that distinguish the learning organization. I explain them in some detail here, as they are critical to understanding the framework. The essence of the first discipline, personal mastery, is “learning to expand our personal capacity to create the results we most desire.”25

The second discipline, mental models, involves “reflecting upon, continually clarifying, and improving our internal pictures of the world, and seeing how they shape our actions and decisions.”26

The third discipline is shared vision, which builds “a sense of commitment in a group, by developing shared images of the future [the group wishes to] create, and the principles and practices by which we hope to get there.”27

Team learning, the fourth discipline, centers on “transforming conversational and collective thinking skills, so that groups of people can reliably develop intelligence and ability greater than the sum of individual members’ talents.”28

Finally, Senge’s model presents systems thinking as the fifth discipline—which grounds the other four. Systems thinking, for Senge, is “a way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behavior of systems [in order to] change systems more effectively, and to act more in tune with the larger processes of the natural and economic world.”29 Senge emphasizes that the “essence” of systems thinking “lies in a shift of mind,” which entails “seeing interrelationships rather than cause-effect chains [and] processes of change rather than snapshots.”30

Learning organizations come to fruition when the people in them are, in Senge’s words, “committed to the practice of these disciplines for themselves—expanding their own capacity to hold and seek a vision, to reflect and inquire, to build collective capabilities, and to understand systems.”31

Clearly, William DePuy was a practitioner of Senge’s five disciplines. Although he might not have described his own outlook or vision in exactly these terms, and although he did not single-handedly transform the Army into a learning organization, DePuy’s work on FM 100-5 allows us to appreciate how the right leader can bring out an organization’s innate ability to function as a learning organization. DePuy demonstrated how a leader could mentor through practice so that people in the organization can become better systems thinkers.

In his vigorous efforts at outreach and collaboration, DePuy set in motion a process that revealed the Army as a capable practitioner of the first discipline, personal mastery. In the often strained dialogue between the infantry and armor communities within the Army, in the DePuy-initiated conversations between the Army and the Air Force Tactical Air Command, and in the international dialogue between U.S. and German doctrine developers, Army leaders exemplified the process of “learning to expand our personal capacity to create the results we most desire.”32

If the second discipline, mental models, involves “reflecting upon, continually clarifying, and improving our internal pictures of the world, and seeing how they shape our actions and decisions,” the DePuy-led process of using empirical data from events such as 

as the Yom Kippur War challenged assumptions about procurement, training, and doctrine—thereby revealing the Army as a learning organization in this way as well.33

DePuy’s idea that doctrine would be the hub of the wheel from which the spokes of procurement and training (among others) would extend was instrumental in leading the Army to the third discipline, the shared vision, understood as “shared images of the future and the principles and practices by which we hope to get there.”34

The FM 100-5 development process was also an example of team learning, the fourth discipline. Inter-service, international, and intra-service dialogues “transform[ed] conversational and collective thinking skills” through an evaluative and iterative process that evokes the essence of modern conversation theory such as that offered by Pangaro.35

By approving FM 100-5, the Army embraced the fifth discipline by presenting a new “way of thinking about, and a [new] language for describing and understanding, the forces and interrelationships that shape the behavior of systems [in order to] change systems more effectively, and to act more in tune with the larger processes of the natural and economic world.”36 The manual “began a doctrinal reorientation rivaled in the U.S. Army’s peacetime history only by the adoption of the pentomic division in 1956.”37 In its holistic view of war and the Army’s role in it, the manual was truly a “shift of mind,” which entailed “seeing interrelationships rather than cause-effect chains [and] seeing processes of change rather than snapshots.”38

**General DePuy and Doctrine’s Moral Content**

Building “a sense of commitment in a group, by developing shared images of the future [the group wishes to] create, and the principles and practices by which we hope to get there” suggests a critical point about systems thinking and the learning organization.39 Systems analyst C. West Churchman brings this point forward succinctly. He notes that the learning organization is morally driven. Like DePuy, Churchman was partial to systems analysis, co-authoring the “first international textbook in the field” in 1957.40 His primary interest was to “apply philosophy [particularly ethics] through operations research, to industrial and governmental issues.”41 Churchman’s fundamental works on learning organizations and systems thinking are the *Design of Inquiring Systems* and *The Systems Approach and Its Enemies*.42 They argue that efficiency and effectiveness in organizations are inextricably bound up with the organizational ethic, and that “ethical alertness comes from thinking systemically.”43 He sets forth seven central concepts (that overlap and actually expand upon the basic ideas in Senge’s five disciplines): “system teleology, sweep-in, unfolding, boundary setting, securing, wisdom, and hope.”44 Churchman defines wisdom as “thought combined with a concern for ethics.”45 He further defines hope as “the spiritual belief in an ethical future.”46 Churchman gives the learning organization and systems thinking a more refined values base. In recent years, educational leaders, managers, and policy makers have emphasized it as a commitment to “shared mission, vision, and values” or a professional learning community, under which an organization gathers its “collective inquiry, collaborative teams, action orientation and experimentation, continuous improvement, and results orientation.”47

Twenty years before the publication of the Army Values, the Warrior Ethos, and the Soldier’s Creed, DePuy’s doctrinal development process revealed the Army’s moral commitment to institutional evolution. DePuy was concerned about efficiency and effectiveness, but he had the moral belief that the Army as an institution had an obligation to...
the Nation to respond to new challenges after the Vietnam War, which required reframing the Army’s intellectual foundation. DePuy sought “the best available thought” as he went about changing the way the Army thought about fundamental doctrine.48 He saw doctrine as “a most important product of an army’s attempt to foresee and prepare for the future [and] a living body of ideas and not a writ of permanent, inviolable laws.”49

Finally, DePuy saw how doctrine affects what theorists Lee Bolman and Terrence Deal call the four frames of the institution: the political, structural, human resources, and the symbolic.

As to the political (the conflict over power in the organization), DePuy directed TRADOC to synchronize ideas across branches and functional areas. In terms of the structural (the rules, roles, goals, and policies that govern the relationship with the environment), DePuy’s FM 100-5 articulated a way of understanding the relationships under the rubric of the Active Defense. In terms of the human resources (how the organization defines roles and missions), DePuy’s FM 100-5 erased any doubt that the Army would be characterized by people from an organizational culture that valued initiative and autonomy in order to succeed in a decentralized conflict environment. Finally, as to symbolism (how culture develops and is shared), DePuy insisted that the Army publish FM 100-5 in a camouflage binder instead of a manila one, a clear example of form enhancing substance in an effort to focus the Army’s attention on the first battle of the next war.50

The evolving Army I came into in 1985 and the still evolving Army I will leave after 27 years of service in 2012 owe much to William DePuy, an intellectually brilliant, morally centered leader, mentor, and thinker who reminded us that doctrine is not an end state, but a journey. MR

NOTES

1. The general is Don Starry, one of DePuy’s closest colleagues in the doctrine development process. The vignette is well told in James Killeen’s Prodigal Soldiers: How the Generation of Officers Born of Vietnam Revolutionized the American Style of War (New York: Simon and Schuster: 1995), 151-55.


3. Then-MAJ Paul Herbert’s superb Leavenworth Paper on this subject is a foundational source and primary inspiration for this essay. 1 July 1976 was the date the Department of the Army approved the publication, though it was not distributed until later in the year. Paul H. Herbert, Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations (Fort Leavenworth, KS: U.S. Army Combat Studies Institute, 1988), 93 and 95.


5. Eggert, 86.


7. Eggert, 86.


10. Ibid.

11. Herbert, 23.


13. Herbert, 17.

14. Ibid.

15. Ibid., 18.

16. Ibid., 64-65.

17. Ibid., 65.

18. Ibid., 68.

19. Ibid., 31.

20. Ibid.

21. Ibid., 33.

22. Ibid., 34.

23. Ibid.


26. Ibid.

27. Ibid.

28. Ibid.

29. Ibid., 7.

30. Ibid., 73.

31. Ibid., 7.

32. Ibid., 6.

33. Ibid.

34. Ibid.

35. Ibid.

36. Ibid., 7.

37. Herbert, 95.

38. Senge, 73.

39. Ibid., 6.


41. Ibid.

42. Ibid., 63.

43. Ibid., 92.

44. Ibid.

45. Ibid., 65.

46. Ibid.


49. Ibid.