



Desert Storm? or Thyroid Storm? An Inquiry

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When President Bush was discovered to have hyperthyroidism in May 1991, questions arose as to the possible influence of his illness on his response to the Persian Gulf crisis. Hyperthyroidism is known to be associated with irritability, restlessness, overactivity, and emotional lability and has important cognitive effects, including impairment of concentration and memory. Confronted with the testimony of eight Secretaries of Defense and three Chairmen of the Joint Chiefs of Staff supporting the continued use of sanctions, containment, and negotiations, the hyperactive president "overpersonalized and overemotionalized" the crisis and opted for war. This inquiry explores the potential interaction of his overactive gland with a decision making process in the Persian Gulf crisis that established a precedent for the use of force in resolving international conflict in the post-cold war era. [PSRQ 1992;2:135-145]

Let me confess at the outset that the title of this inquiry is both a stratagem and a portrayal of the issue. The somewhat facile association of two "storms"—desert and thyroid—is clearly a device designed to highlight the potential impact of illness on decision making. The inquiry cannot lead to a definitive conclusion and will surely raise as many questions as it answers. Nevertheless, its jus-

tification is strongly rooted in the benign neglect generally accorded all suggestions that decisions for war or peace may lie outside the framework of structural realism or considerations of national interest alone. In particular, the effects of illness or trauma on the directions that national leaders follow are rarely taken into account.

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"Thyroid storm" is an exaggerated form of hyperthyroidism that represents an acute medical emergency. It may progress to cardiovascular collapse unless proper treatment is rapidly initiated. Fever up to 106°F, markedly increased heart rate, and congestive heart failure develop, accompanied by changes in mental status ranging from disorientation

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to delirium and coma. Usually a precipitating factor can be identified, such as surgery, stress, emotional disturbances, and intercurrent illnesses [1,2].

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Shortly after the announcement in May 1991 that President George Bush had hyperthyroidism, questions arose about the possible interaction of his illness with his handling of the Gulf crisis. William Safire commented in the *New York Times* that the President "was hyperthyroid for months, perhaps longer, until that abnormal stimulation affected his heartbeat Was he 'hyper' last August 2nd? Did the overactive gland affect his decision to launch the air war or the ground war early this year?" [3]

An article in the *Los Angeles Times* echoed these thoughts. "The American public has a right to ask whether the disability could have affected his decision making activities during the Gulf war. Did a level of vague anxiety, a hyperkinetic 'need to move,' play any role when he quickly bypassed General Colin Powell's recommendation favoring sanctions over war?" [4]

Although Bush never suffered a "thyroid storm," or even a very severe form of hyperthyroidism, it is reasonable to probe the potential impact of his illness. Bush was the fourth oldest individual to be elected to the presidency, at an age in which the diseases that have affected other presidents—heart attacks, strokes, trauma, and many others—might well be anticipated [5]. After all, 20% of all our presidents have died in office. Small wonder, then, that Bush should also exemplify the vulnerability of past presidents and develop a condition that is so common in the rest of the population.

In examining this issue, I will review Bush's medical course briefly and then address the cognitive effects of hyperthyroidism, the duration of the illness, and the potential interaction of his overactive gland with the decision for war.

THE MEDICAL EVENTS

At about 4:00 P.M. on Saturday afternoon, May 4, 1991, Bush suddenly felt fatigued and became short of breath while jogging at his Camp David retreat. He stopped jogging but did not faint or collapse. He was able to walk several hundred yards to the medical facility without loss of consciousness or chest pain. The White House physician on duty that

day, Dr. Michael Nash,¹ examined the president and found that he had atrial fibrillation, with an irregular heartbeat. His heart rate rose to a level in the mid to upper 90s.

The president was transported by helicopter from Camp David to the Naval Hospital in Bethesda at 5:38 P.M. and arrived there 20 minutes later. He was treated initially with digoxin to slow his heart rate. A series of tests, including electrocardiography and echocardiography, demonstrated no evidence of any valvular abnormality or damage to the heart muscle.

Bush rested well on Saturday night, but the heart irregularity persisted on Sunday morning. He was then placed on procainamide, a drug that frequently interrupts the arrhythmia and allows the heart to resume normal rhythm. Throughout the day, the irregular beat persisted. At about 10:25 P.M., the rhythm suddenly converted to normal and remained so until 4:50 A.M. the following morning, when the fibrillation recurred.

Dr. Burton Lee, the Physician to the President, had arranged for three cardiologists to see the President in consultation. The preferable approach, it was agreed, was drug therapy. If it failed, electrical cardioversion would be in order (General anesthesia would then be required. It was announced that Dan Quayle would serve as Acting President while Bush was unconscious.)

Bush left the hospital for the White House on Monday morning May 6. The irregularity of the heartbeat continued from 4:50 A.M. to about 9:45 A.M. The rhythm returned to normal shortly after his arrival in the Oval Office and remained normal throughout the day. The reason for the fibrillation remained unclear. "We don't know exactly what caused it. We frequently don't know," said Dr. Bruce Lloyd, Chief of Cardiology at the Naval Hospital. "There are occasional medical conditions which cause minor metabolic abnormalities that will trigger it. We have tested for all those and found none" [6]. This statement was difficult to understand; in the absence of valvular or coronary disease, the metabolic abnormality most closely associated with

¹ There are four physicians on the White House medical staff. Dr. Burton Lee, a personal friend of George Bush and an oncologist, is Physician to the President. The other three are career military men. Dr. Lawrence Mohr, an internist who is an Army officer, is the Executive Physician to the White House. Dr. Michael Nash, an Air Force physician, is a general internist, and Dr. Alan Roberts is a Naval officer who has specialized in pulmonary medicine. All four share responsibility for emergency call on a rotating basis.

atrial fibrillation in Bush's age group is hyperthyroidism. Lloyd's comments indicated that tests for increased circulating thyroid hormone were normal.

On Monday, in fact, a blood test strongly suggested the presence of hyperthyroidism, or Graves' disease. Three tests were then performed independently at the Naval Medical Center and the Walter Reed Army Hospital, and the diagnosis was established on Tuesday morning, May 7 [7,8]. That evening at about 6:00 P.M., the President's rhythm became irregular once more for a few minutes. Thereafter, on Tuesday night and the following days, it remained normal. On Wednesday morning he was given a small dose of radioactive iodine to determine the uptake by the thyroid and to demonstrate the anatomic configuration of the gland.

Twenty-four hours later, on Thursday morning at 7:00 A.M., he returned to Bethesda, where the iodine uptake confirmed the diagnosis. He was then given a much larger dose of radioactive iodine for treatment.² The full effect of the radiation would not occur for a two- to three-month period. In the days that followed, the President resumed his schedule while tempering his exercise regimen. Two months later, on July 9, 1991, it was announced that he had begun to take daily synthetic thyroid hormone because the gland was destroyed by the radioiodine [9].

THE COGNITIVE EFFECTS OF AN OVERACTIVE THYROID GLAND

In Graves' disease, the characteristic clinical findings resemble heightened activity of the sympathetic nervous system in many respects. The rapid heart rate is accompanied by increased cardiac output and hyperactive behavior [10]. There is evidence that stress influences thyroid function; in many cases, emotional crises have been followed by the hyperthyroid state [11,12].

² It is not entirely clear why a therapeutic dose of radioiodine was administered immediately. Pretreatment with an antithyroid drug has been advocated in the older age group to guard against an aggravated thyrotoxicosis that sometimes develops after radioiodine treatment. Although the regimen followed was the quickest route to eliminating the hyperthyroid state, it may not have been the safest. By using a method designed for rapid ablation of the gland, it became possible to emphasize the short-term nature of the illness, avoiding the perception of a president afflicted by a condition that was protracted. This should not be taken to imply that political considerations played a role in the choice of management, since some thyroidologists would view the therapeutic regimen chosen as an acceptable, if not a preferable option.

Symptoms and signs include palpitations, sweating, tremor, faintness, irritability, restlessness, overactivity, and emotional lability. Such a cluster may be difficult to distinguish from anxiety states of emotional origin. There may be important changes in the areas of sleep and rest, in home management, or in leisure and recreation, sometimes associated with a critical and demanding approach to family and social interactions. Over half the patients have difficulty in sleeping at night [13].

Slight mental disturbances are apparent in 90% of patients suffering from hyperthyroidism [14]. Attention, concentration, and memory may be impaired. Aggressive and impulsive behavior has been observed [10,15,16]. The clinical appearance may resemble a manic depressive or paranoid state [17].

When objective tests are employed, the cognitive and emotional function of patients may resemble that of individuals with known brain damage. Tasks requiring visual search, close attention, alertness, shifting of cognitive set, exclusion of irrelevant stimuli, new verbal learning, and complex problem solving are impaired when the circulating levels of thyroxin are high. A poor adaptation to stress has been observed, in association with the cognitive impairment, anxiety, and moodiness. Learning and the ability to concentrate deteriorate in some patients [18-21].

Eighty percent of patients with hyperthyroidism may have an abnormal electroencephalogram (EEG) before treatment. Ten years after the onset in one group of patients, 68% still had abnormalities in their EEGs [22].

The evidence is compelling that excess thyroid activity may significantly alter "cognition," that sophisticated interaction of mental processes that produces human thought. Among the host of functions embodied by cognition are concentration, attention, memory, deliberation, inference, discrimination, recognition, comprehension, evaluation, deductive and inductive reasoning, and abstract and logical thought. All are applicable to decision making, particularly when time is limited. The pressure of time heightens the urgency of prompt yet measured assessments and of organizing and integrating information from varied sources effectively.

But in the "sick state," attention is drawn inward and mental energies are devoted to dealing with the concerns evoked by the disease [23].

An obvious overlap exists between the cognitive

effects of organic disease and those of stress [24]. This is hardly surprising because stress is both a cause of disease and a product of it. Sound decision making requires an accurate assessment of the utility of an outcome. But perceptions of utility may be drastically altered by illness, which acts as an "interrupter," demanding the individual's attention [25]. Of equal importance, the information-handling capacities of the sick leader are diminished.

While hyperthyroidism may alter cognitive capacities and thereby affect decision making, it does not necessarily follow that it had a major impact on George Bush's response to the Persian Gulf crisis. Was his thyroid overactive when he made the decision for war?

THE DURATION OF ILLNESS

Bush's illness certainly anteceded the bout of atrial fibrillation on May 4. The White House Deputy Press Secretary—Roman Popadiuk—dismissed the issue simply by saying, "There was no problem at the time of the war" [26]. But the President's physician was not so certain of the time of onset. His "estimate" was that it began February 12 or later, four weeks after the air attack was launched [7]. Bush had experienced a number of bouts of fatigue and shortness of breath while jogging in the weeks before May 4, probably as a result of transient episodes of fibrillation. Not long before, he had complained to a friend that he had to quit jogging early because he was "pooped" [27]. He had also lost weight over the prior weeks, all the more unusual because he had had difficulty in keeping his weight down in the past. Among the endocrinologists who were questioned about Bush's condition, several suggested that he could have had an overactive thyroid as far back as the 1988 presidential campaign, or possibly prior to that time [28]. A photograph of Bush taken in 1989 demonstrated a prominence in his neck that a number of physicians believed may well have represented a goiter present at that time (Figure).

If the President had not developed an arrhythmia, his physicians might still be unaware of his thyroid state. Had his fibrillation developed six months later, dating the onset of his thyroid condition would have entailed the same guesses of weeks to months. In fact, it is well known that many patients may be thyrotoxic for years before they are diagnosed or

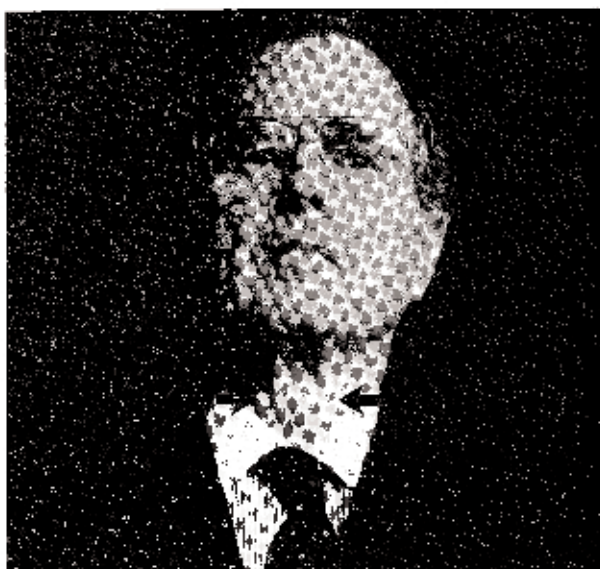


FIGURE A full-face view of George Bush taken on February 8, 1989. Arrows point to prominent thyroid (Larry Downing, *Newsweek Magazine*.)

treated. When we consider Bush's behavior over the prior year, the evidence for a hyperactive, hyper-metabolic personality is very powerful. It was not just the extraordinary physical activity—the manic jogging, the weight lifting, the rush to complete 18 holes of golf, tennis, raquetball, gunning his speedboat, the stair climbing machine, the treadmill machine, the apotheosis of the national addiction to exercise as the road to longevity and fitness that he represented. There was also the quarter of a million miles of air travel in his first two years. There was the nonstop, breakneck character of his daily schedule. Bush's calendar for September 1990, even while the Gulf cauldron was boiling, included 13 scheduled appearances in nine days on the road: an address to the U.N. General Assembly, a U.N. children's event, a dedication ceremony at Ellis Island, and 10 fund-raisers in six cities across the country [29]. Beyond the frenetic pace, there was also the uneasiness at inactivity and the phone calls night and day around the world.

An active man? Or a hyperactive man? Good adrenal glands with lots of circulating adrenaline? Or hyperfunctioning thyroid cells for a long time, affecting all aspects of his activity and behavior? Or was it both? The combination of the anxiety, irritability, and emotional lability of the thyrotoxic patient has been viewed as an exaggeration of pre-existing personality traits [30].

The biochemical evidence that Bush had Graves' disease "for months, perhaps longer"—in Safire's words—was not available. The onset of the disease is usually insidious. The tests that might have given an unequivocal answer were never performed during his earlier medical examinations, or, if they were, we have no knowledge of it. (Chemical assays, such as a plasma T4, are commonly included in the battery of blood tests obtained on many healthy patients during a routine physical.)

THE DECISION FOR WAR

With the invasion of Kuwait on August 2, 1990, the President claimed that the United States stood in the Gulf where it had always stood, against aggression. But his statement was not consistent with our behavior toward Iraq during the prior decade. This was, after all, the same Saddam Hussein who led the aggression against Iran in 1980 without provoking a U.S. military strike to protect the nation attacked. Instead, in 1982, the Reagan-Bush administration took Iraq off the list of countries supporting terrorism and two years later established diplomatic relations with Iraq. As early as 1981, the United States supplied military intelligence to Iraq so as to help in the war with Iran. Vice-President Bush played a central role in assuring hundreds of millions in support of Iraq from the Export Import Bank in 1984 and 1987, and then in 1989 as President, thereby freeing huge amounts of capital for Saddam Hussein to devote to building the Iraqi military machine [31]. The Commerce Department approved exports valued at \$1.5 billion from 1985 to 1990. Such items as equipment for calibrating, adjusting, and testing surveillance radar went to Salah Al-Din, a unit involved in the construction of military radar for SAAD 16 (an Iraqi center for missile development) [32]. On July 27, six days before the invasion of Kuwait, the Bush administration opposed a Congressional vote to cut off loan guarantees to Iraq. In July, the President also vetoed a bill that would have required him to impose sanctions on countries and companies developing or using chemical or biological weapons—with Iraq perhaps the most important target [33,34].

Throughout this period, there was a consistent disregard of Saddam Hussein's growing military, his use of poison gas against Iran and against the Kurds, and his savagery in violating basic human rights.

The administration did everything in its power to legitimate the Iraqi regime.

Suddenly, the leader whom we had supported for a decade was seen in his true colors as another Hitler, in Bush's view. Was our valued ally, Saddam Hussein, transformed overnight? Or did the conflict with Iraq become, in Brzezinski's words, "over-Americanized, overpersonalized, and overemotion-alized" [35]?

The President had said on August 8 that "the economic sanctions should begin to bite soon." [They] "can be very, very effective . . . he's [Saddam Hussein] already beginning to feel the pinch, and nobody can stand up forever to total economic deprivation" [36]. He informed a joint session of Congress in September that "these sanctions are working" [37]. On October 1, he was "encouraged that perhaps [sanctions] are having a strong effect" [38]. In the same month, Secretary of State Baker said, ". . . we must exercise patience as the grip of sanctions tightens with increasing severity" [39]. The question confronting the country and the coalition was whether sanctions, military containment, diplomacy, and negotiation could achieve the goal of forcing an Iraqi withdrawal from Kuwait. Meanwhile, knowledgeable national figures were giving the President and the nation their counsel, much of it during Congressional Committee hearings.

On October 28, 1990, General Schwartzkopf said, "Now we are starting to see evidence that the sanctions are pinching. So why should we say, O.K., we gave them two months and it didn't work? We've just got to be patient" [40].

A month later, James Schlesinger, former Secretary of Defense and Energy and former Director of the CIA said, "Early on, it was officially estimated that it would require a year for the sanctions to work. . . . Since the original estimate was that the sanctions route would require a year, it seems rather illogical to express impatience with them because they have not produced the hoped-for results in six months" [41].

On November 28, 1990, Admiral William J. Crowe, Jr., former Chairman of the Joint Chiefs of Staff, said, "The embargo is biting heavily . . . we should give sanctions a fair chance. I believe they will bring him [Saddam Hussein] to his knees ultimately. If the sanctions will work in 12 to 18 months instead of six months, a tradeoff of avoiding war would be more than worth it. . ." [42].

Before the same Senate Armed Services Committee, General David C. Jones, another former Chairman of the Joint Chiefs of Staff, labeled President Bush's call for an "offensive military option" a "high risk tactic." "The deployment might cause us to fight, perhaps unnecessarily. . . . This would be unfortunate, for there are indicators that the embargo is having about the predicted effect on the predicted time table" [43].

On November 29, former Secretary of the Navy James Webb raised serious questions about "the President's error in sending so many troops . . . the proper course would be to immediately and dramatically reduce the number of troops committed to the region, consolidating them into a defensive position . . . Initiating a violent clash because another nation has not agreed to the President's time table for an unconditional surrender is not the appropriate approach. . ." [44].

General William Odom, former Director of the National Security Agency, testified that the blockade "seems to be fairly tight. If it is continued for a year or two, the damage will be large. Those who criticize this strategy say the sanctions are not working. The objection is without merit because it sets an unrealistic time frame for the blockade to take its toll" [45].

On December 4, 1990, former Secretary of Defense Robert McNamara said, "We should be prepared to extend the sanctions over a 12 or 18 month period if that offers an opportunity to achieve the political objective without the loss of American lives" [46]. Zbigniew Brzezinski, former National Security Adviser, testified that "economic sanctions require time to make their impact felt, but they have already established the internationally significant lesson that Iraq's aggression did not pay. . ." [35]. Caspar Weinberger echoed much of the testimony. "I understand people get impatient and all, but I do not believe in rushing in and attacking early" [47]. General Colin Powell had also expressed his view to the President: "There is a case here for the containment or strangulation policy. This is an option that has merit. It may take a year, it may take years, but it will work some day" [48].

Meanwhile, testimony before the Joint Economic Committee concluded that "sanctions are capable of forcing the Iraqi withdrawal from Kuwait" [49]. The director of the CIA reported that sanctions had shut off more than 90% of imports and more than 97% of exports [50].

There were others, of course, who came to different conclusions. Secretary of Defense Dick Cheney acknowledged, in mid-December, that the embargo was "effective" in curtailing Iraq's imports and exports. But he foreshadowed the use of force in his disbelief that sanctions were causing Saddam Hussein to pull out of Kuwait and that "patience" was producing the desired results [51]. Within the inner circle, Admiral Scowcroft and White House Chief of Staff John Sununu were skeptical of the impact of sanctions [52]. Outside it, Henry Kissinger shared their view [53]. Les Aspin, Chairman of the Armed Services Committee, emphasized, like Cheney, that "sanctions are working technically—superbly as a matter of fact." Nevertheless, he clearly supported the thrust to war if Saddam Hussein failed to withdraw by January 15, 1991 [54].

Bush heard what he wanted to hear. The evidence is strong that he discouraged advice that was at variance with his own conclusions [55]. "Few people, with the possible exception of his wife, will ever tell a President that he is a fool," according to Gerald Ford. "There's a majesty to the office that inhibits even your closest friends from saying what is really on their minds" [56]. The effect on General Colin Powell was to limit sharply his willingness to endorse fully the alternative to war that he considered the best policy [55].

Opinions were sought by the Congress and expressed in hundreds of pages of committee testimony. But the cumulative weight of the experience and reasoning of eight of nine former Secretaries of Defense and three Chairmen of the Joint Chiefs of Staff in favor of staying the course with nonmilitary means was powerful [47]. It was enough to persuade the Sam Nunn, the Lloyd Bentsens, the Fritz Hollings, the Mark Hatfields, and the John Glenns that the rush to war was not supportable and that the unprecedented multilateral application of sanctions should be given a proper chance.

Not so the restless, impatient, outraged president. Shortly after hearing of the invasion of Kuwait, he had made, in his own words, an "almost instantaneous" decision that the U.S. must intervene [57]. Bush had written to Saddam Hussein in July, "We believe that differences are best resolved by peaceful means and not by threats involving military force or conflict" [58]. Now he was inflamed that the beneficiary of American support during the prior decade would behave so intolerably when Bush had viewed him as an element of balance in the tortured Middle

East equation. He responded with a shrillness of tone and invective and a strong personal element in his public statements and ultimata. If Saddam's rhetoric seemed overdrawn, Bush was driven to match him. "Outrageous acts of barbarism. . . Brutality—I don't believe that Adolph Hitler ever participated in anything of that nature," Bush said. "I have had it" with Saddam Hussein [59]. White House officials characterized Bush as "mad, testy, peevisish" [29]. Elsewhere, the President was depicted as "an impulsive, almost glandular leader" [60]. In George Ball's words, he "rejected diplomacy and effectively ruled out any solution short of capitulation" [61].

On August 2, White House counsel C. Boyden Gray, who had seen Bush energized in many different situations, believed that the President "was now betraying the traits of a cornered man" [52]. Four days later, "visibly furious," Bush said, "Iraq lied again . . . these are outlaws—international outlaws and renegades. . . This will not stand, this aggression against Kuwait" [29,62]. In the view of General Powell, "It was almost as if the President had six shooters in both hands and he was blazing away. He was worked up, his mind made up. . ." [52].

Bush contended on August 8 that "the mission of our troops is wholly defensive" and that the military would not initiate hostilities or be used offensively [36]. But two months later, on October 31, he gave approval for moving to an offensive posture (to be implemented after the Congressional election on November 4). On November 6 he publicly directed an increase in the size of the U.S. forces to support "an adequate offensive military option" [63].

On November 30, the President indicated that he would see the Iraqi Foreign Minister in Washington—and Secretary of State Baker would visit Baghdad to see Saddam—sometime between December 15 and January 15 [64]. That same day he met with Congressional leaders, becoming very emotional about events in Kuwait. He was not looking for a compromise, just a chance to make sure that Saddam Hussein "got the message." Two weeks later, Admiral Scowcroft said, "The President has made up his mind." The diplomatic efforts "are all exercises" [52]. Saddam, in Bush's words, was "going to get his ass kicked" [55].

In a letter to Congress on January 8, Bush requested authorization to go to war against Iraq if it refused to withdraw from Kuwait. The Congress-

sional debate that followed repeated many of the arguments adduced in the November and December Senate and House Hearings. Opposition to the resolution was divided between those who believed that sanctions must be given a full trial even if force was ultimately required and those who felt that war was not an acceptable option.

Supporters of the resolution to authorize force advocated either "peace through strength" or "war now," since it was inevitable.

Much of the discussion boiled down to a single question: given the possibility of many casualties and other adverse effects, why not try a readily available alternative that was already in motion?

The impassioned Congressional debate revealed a profound schism (a change of three votes in the Senate would have defeated the resolution), but it was not enough to influence the President's decision. In Bush's view, this was "truly the last best chance for peace" [65].

This concept of authorizing war to achieve peace was attacked by Congressman Walker of Pennsylvania as an abdication of Congressional responsibility. "There is one day here where there ought not to be any political cover. If you are for war, then by God, let us get a straight up declaration. . ." [66].

One day before the Congressional vote, President Gorbachev, in direct conversations with Bush, proposed a "new initiative" to avert military conflict. In response, Press Secretary Fitzwater said the White House was anxious "not to get anyone's hopes up." Meanwhile, Bush relentlessly pursued members of Congress, urging them to vote for the resolution as an issue of personal loyalty as well as of national security [67,68]. With the U.S.S.R. as the largest military supplier to Iraq and an important ally before the invasion of Kuwait, it might have been thought that Soviet influence would be useful in promoting a peaceful resolution. But negotiations with Iraq would have required more time. As the January 15 deadline approached, Defense Secretary Cheney reiterated the administration's resolve to wage a quick war against Iraq if necessary [69].

In retrospect, it is clear that the resolution authorizing the President to use force merely ratified a virtually inevitable war. Congressional opposition was effectively blocked far earlier than January 12, 1991. Bush set the policy in motion when he doubled the troop deployment for an "offensive option" on November 8. When the U.N. passed resolution

678 authorizing the use of force after January 15, the commitment to the new policy was fixed, powerfully affirmed by presidential declaration and U.N. resolution. It would have required a highly assertive Congress to reverse it.

Once the vote of authorization was approved by the House and Senate on January 12, Speaker Tom Foley's prediction that the President would use his power "sooner than we realize" was fulfilled on January 16 with the initiation of the air war. Nor would a defeat on the resolution have deterred the President: he contended that he had the constitutional authority to act without Congressional authorization [70].

A different president, who weighed the costs and benefits and was prepared to listen to and digest all of the expert testimony with an open mind, might well have responded with a more cautious policy. Quite aside from the 286 American, 91 Allied, and 14 Israeli casualties, there were at least 100,000 Iraqi military personnel killed, 7,000 civilians, and many thousands of children who were war-related casualties [71,72]. The cost of military involvement and war damage was probably 100 billion dollars or more [73-75]. The president gambled. As one congressman put it during the debate on January 11, "If the war is short and the casualties few, the President will be a hero and the war will be judged a victory, but if it is long and deadly, the country will feel the bitterness of division once again" [76].

In fact, the war was short and judged a victory. But the large number of casualties, the brutalization of Kurds and Shiites in Iraq, the catastrophic ecological effects, the dislocation of millions of refugees—all of the human and regional destruction—was predictable, no matter how difficult it was to quantify prospectively. The alternative, the risk that aggression would be "rewarded" if sanctions failed, was serious but not inevitable; the military option would never have been precluded.

Much has been made of our potential "loss of credibility" if the hammer had not been tripped on January 16, 1991 [54]. Less has been said of the cumulative cost, of the effect of Saddam's continuance in power despite the military effort, and of our inability to protect the Kurds and Shiites from his terror and his sanctions. But even if the cost in lives were not too high, if the resources expended were not excessive, and if a more stable Middle East ultimately emerges from the Gulf war, the nature of

the decision, the factors that underlie it, and the pattern it sets for international conflict resolution require continued examination, discussion, and evaluation. Such questions confront the widely held view that logic, reason, and predictable decision making underlie the framing of national policy. The theory is that rational man will choose the best possible course after weighing the probabilities and the potential gains and losses of alternative courses of action. The solidity of the information base—the data at the node points—is assumed.

If this is how decision analysis should be applied to foreign affairs, it is by no means the pattern that is invariably followed. It is certainly true that at times domestic politics drives the process more than any other factor [77]. In other circumstances, leaders misperceive and go to war believing that important national goals will be attained. Consider the decision analytic pathway pursued in the Bay of Pigs; the escalation of the Vietnam war; Iraq's attack on Iran; the U.S.S.R.'s invasion of Afghanistan; Vietnam's intervention in Cambodia; the Iraqi conquest of Kuwait. All of these major national actions proved to be catastrophic because of human error in assessing the situation and the response of other nations or groups.

The analytic process is degraded when leaders are working under great pressure. During crises, major perceptual problems are encountered [24,78,79], as well as narrowing of the cognitive process and restricted spatial and temporal awareness [80]. Increasing errors are observed under the pressure of time [81], and a group dynamic develops that may ultimately substitute consensual validation for critical assessment [25].

These changes in behavior have been dealt with primarily as the response to stress of "normal" or stable individuals. But ill health and physical disability may alter the capacity of older people to cope [82]. Powerful as it may be, the office of the presidency confers no protection from trauma or sickness. Among the 17 presidents in this century, seven had assassination attempts on their lives, two successful. Nine suffered from heart disease, four had high blood pressure, and four had strokes. Six underwent surgery at least once, and three had cancer. Their illnesses included kidney ailments, ulcers, intestinal obstruction, respiratory disease, diabetes, adrenal insufficiency, and periodic alcohol abuse [84].

Individuals in the military and government alike

use drugs that affect behavior and decision making profoundly [84,85]. If it is true that apparently healthy leaders make decisions influenced by many factors other than logic, the assumption of rational decision making is even less credible if the leadership is impaired by physical, metabolic, psychological, or drug-induced disability.

Nevertheless, this inquiry into the relationship of hyperthyroidism to Bush's decision should be greeted with appropriate skepticism. There were, of course, alternative explanations. Cheney's, Scowcroft's, and Sununu's positions provided strong reinforcement for Bush's convictions. During the fall of 1990, there were major domestic setbacks for Bush. The domestic economic summit was a failure, and losses in the midterm election were accompanied by a fall in popularity (to 47% in November). The Gulf war turned out to be a tonic for a drifting presidency.

One of the most compelling aspects of the decision-making process was the degree to which Bush seemed to personalize the conflict. This may well have represented a decisive moment for him to cast off the "wimp" image once and for all. "George Bush, it seems, wanted a fight, and, as future historians will point out, he provoked Saddam into obliging him," as one authoritative analyst of the war concluded [85].

It is fair to ask whether Bush's decision for war was consistent with his past behavior. Bush was a decorated Navy pilot in World War II and obviously had to take chances. After college, however, except for his original entry into the oil business in 1950 (funded by his uncle, Herbert Walker), he was not a gambling man.

Over the years, his career has been characterized more by caution and expediency than by firm stands on principle. As U.S. representative in the U.N., chairman of the Republican National Committee, chief of U.S. Liaison in China, head of the CIA, and, finally, Vice-President, he remained generally in the background.

Panama was a gamble, but the risk was hedged, as with his entry into the oil business. The Persian Gulf, by contrast, could well have been an American catastrophe. There was concern among some military officials that Bush did not fully understand the risks of a deployment "that dwarfs the Panama invasion force. . ." [85]. If it had dragged on and American casualties had been higher, the fabric of

national support might have unraveled. It was not the kind of cautious move that might have been anticipated from much of his past, although, even here, Bush took pains to exaggerate the military strength of Iraq [86].

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Have I overemphasized the importance of excess thyroid hormone? Its effects simply cannot be disregarded. Acknowledging the potential cognitive impact of organic disease on the President and the need to monitor his illnesses carefully is in the best interests of the country.

With the radiation ablation of his thyroid gland, the President moved from *hyperthyroidism* to *hypothyroidism*. Untreated hypothyroidism in adults may depress intellectual and motor function over time, with as many cognitive and psychological changes as in the hyperthyroid state. Such patients become lethargic, gain weight, and develop a hoarse voice and dull appearance. Fortunately, effective treatment is available, and the President is now receiving replacement thyroid hormone. He will require daily treatment for the rest of his life. Meanwhile, attention will be focused on the personality changes that may occur in the new George Bush. No longer hyperthyroid and hypermetabolic, will he be kinder, gentler, slower? Certainly not slower, if the pace of his January 1992 visit to the Far East is any index.

Bush's physicians have done their best to convey the progress of his illness, far better than Woodrow Wilson's, FDR's, or John Kennedy's in the past. Sick presidents may place us all at risk; the best way to assess the hazards involved is the continued exploration of their health by doctors and the media alike and a consistently candid reportage of the nature, severity, and progress of their illness [87].

If the rest of the world follows the agitated example set by George Bush in impulsively moving to the military solution to conflict, the end of the cold war may best be remembered as the beginning of a series of hot wars.

Then, looking back, we might ask ourselves: did his gland affect his judgment? His prudence? Was it thyroid hormone that destroyed the chance to determine whether the best organized multilateral sanctions in history, military containment, and diplomacy could successfully tame a determined aggressor without resorting to war? ?

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REFERENCES

- 1 Davis AT. Psychotic states associated with disorders of thyroid function. *Int J Psychiatry Med* 1989;19:46-56
- 2 Roth R, McAuliffe MJ. Hyperthyroidism and thyroid storm. *Emerg Med Clin North Am* 1989;7:873-883
- 3 Safire W. After the flutter. *New York Times*, May 20, 1991; A15.
- 4 Shavelson L. Was a 'war hormone' at work? *Los Angeles Times*, May 20, 1991;21.
- 5 Abrams HL. Inescapable risk: human disability and 'accidental' nuclear war. *Current Research on Peace and Violence* 1988;11(1-2):48-60
- 6 Green C. Bush back to regular routine. *San Jose Mercury News*, May 7, 1991;A8
- 7 Devroy A. Bush diagnosis: thyroid ailment. *Washington Post*, May 8, 1991;1
- 8 Altman LK. How an overactive thyroid affects health. *New York Times*, May 8, 1991;A9
- 9 Fitzwater M. Quote in: Bush takes thyroid medicine to treat his Graves' disease. *New York Times*, July 10, 1991;6
- 10 Jadresic DP. Psychiatric aspects of hyperthyroidism. *J Psychosom Res* 1990;34:603-615
- 11 Voth HM, Holzman PS, Datz JB, et al. Thyroid 'hot spots': their relationship to life stress. *Psychosom Med* 1975;2:1673-1684
- 12 Burch EA Jr, Messervy TW. Psychiatric symptoms in medical illness: hyperthyroidism revisited. *Psychosomatics* 1978;19:71-75
- 13 Rockey PII, Griep RJ. Behavioral dysfunction in hyperthyroidism: improvement with treatment. *Arch Intern Med* 1980;140:1194-1197
- 14 Lassen E, Eswald H. Acute organic psychosis caused by thyrotoxicosis and vitamin B12 deficiency: case report. *J Clin Psychiatry* 1985;46:106-107
- 15 Lazarus A, Jaffe R. Resolution of thyroid-induced schizophreniform disorder following subtotal thyroidectomy: case report. *Gen Hosp Psychiatry* 1986;8:29-31
- 16 Altman LK. President's thyroid: questions of mood. *New York Times*, May 21, 1991;B5
- 17 Greer S, Parsons V. Schizophrenia-like psychoses in thyroid crisis. *Br J Psychiatry* 1968;144:1357-1362
- 18 Wallace JE, MacCrimmon DJ, Goldberg WE. Acute hyperthyroidism: cognitive and emotional correlates. *J Abnorm Psychol* 1980;89:519-527
- 19 Whybrow P, Farrell R. Thyroid state, human behavior: contributions from a clinical perspective. In: Prange AJ Jr, ed: *The thyroid axis, drugs and behavior*. New York: Raven Press, 1974;5-28
- 20 Paschke R, Harsch I, Schlote B, et al. Sequential psychological testing during the course of autoimmune hyperthyroidism. *Klin Wochenschr* 1990;68:942-950
- 21 Tizpacz PT, Klein I, Greenhouse J. A psychiatric and neuropsychological study of patients with untreated Graves' disease. *Gen Hosp Psychiatry* 1988;10:49-55
- 22 Perrild H, Hansen JM, Arnung K, et al. Intellectual impairment after hyperthyroidism. *Acta Endocrinol* 1986;112:185-191
- 23 Swanson DW. Clinical psychiatric problems associated with general surgery. In: Abrams HS, ed: *Psychologic aspects of surgery, international psychiatry clinics*. Boston: Little, Brown & Co., 1967;103-113.
- 24 George A. The impact of crisis-induced stress on decision making. In: Solomon F, Marston RO, eds: *The medical implications of nuclear war*. Washington, DC: National Academy Press, 1986;529-552
- 25 Janis IL. Decisionmaking under stress. In: Goldberger L, Breznitz S, eds: *Handbook of stress: theoretical and clinical aspects*. New York: Free Press, 1982;69-87
- 26 Murray FJ. White House denies thyroid launched war. *Washington Times*, May 22, 1991;3
- 27 Rosenthal A. President is given 2d drug to treat balky heartbeat. *New York Times*, May 6, 1991;1.
- 28 Altman LK. Bush is called exceptionally fit; says he can now handle stress. *New York Times*, November 1, 1988;28
- 29 Dowd M. The guns of August make a dervish Bush whirl even faster. *New York Times*, August 7, 1991;A8.
- 30 Pehling G, Mork JN. Thyrotoxicosis as a cause of psychosis. *Minn Med* 1977;60:169-171
- 31 Fiantz D, Wass M. Bush secret effort helped Iraq build its war machine. *Los Angeles Times*, February 23, 1992;1,12.
- 32 Farnsworth CH. Military exports to Iraq under scrutiny, congressional aides say. *New York Times*, June 25, 1991;A4
- 33 Holmes SA. Congress backs curbs against Iraq. *New York Times*, July 28, 1990;A5
- 34 Clymer A. New bill mandates sanctions on makers of chemical arms. *New York Times*, February 22, 1991;A6
- 35 Brzezinski Z. U.S. Congress Senate Committee on Foreign Relations. Hearings on U.S. policy in the Persian Gulf, December 5, 1990;163-173
- 36 Bush G. The president's news conference (August 8, 1990). *Weekly Compilation of Presidential Documents*. Washington, DC: U.S. Government Printing Office, August 13, 1990;1220, 1221
- 37 Bush, G. Quoted by Senator George Mitchell in Senate hearings on Gulf war resolution. *Congressional Record*, January 10, 1991;S102
- 38 Bush G. *Public papers of the presidents of the United States*. Washington, DC: U.S. Government Printing Office, October 1, 1990;1338
- 39 Baker J. Quoted by Senator George Mitchell in Senate debate on Gulf war. *Congressional Record*, January 10, 1991;S102.
- 40 Schwartzkopf HN. Quoted from an article in the *Atlanta Journal and Constitution* by Senator Sam Nunn. U.S. Congress Senate Armed Services Committee. Hearings on the crisis in the Persian Gulf region. November 28, 1990;209.
- 41 Schlesinger JR. U.S. Congress Senate Armed Services Committee. Hearings on the crisis in the Persian Gulf region, November 27, 1990;113-177
- 42 Crowe WJ Jr. U.S. Congress. Senate Armed Services Committee. Hearings on the crisis in the Persian Gulf region, November 28, 1990;187-208
- 43 Jones DC. U.S. Congress Senate Armed Services Committee. Hearings on the crisis in the Persian Gulf region, November 28, 1990;187-208
- 44 Webb J. U.S. Congress Senate Armed Services Committee. Hearings on the crisis in the Persian Gulf region, November 29, 1990;305-315
- 45 Odum WE. U.S. Congress Senate Armed Services Committee. Hearings on the crisis in the Persian Gulf region, November 30, 1990;460-467.
- 46 McNamara R. U.S. Congress Senate Foreign Relations Committee. Hearings on U.S. policy in the Persian Gulf, December 4, 1990;2-7
- 47 Gelb LH. A patty derided. *New York Times*, March 10, 1991;A15
- 48 Powell C. Quoted in: Woodward B. *The commanders*. New York: Simon and Schuster, 1991;42. (While Woodward's book lacks footnotes and references, none of the public figures quoted by him have disputed the text.)
- 49 Schuler GHM. U.S. Congress. Joint Economic Committee. Hearings on economic sanctions against Iraq, December 19, 1990;2
- 50 Aspin L. U.S. Congress, House. Committee on Armed Services. Hearings on the role of sanctions in securing U.S. interests in the Persian Gulf, December 21, 1990
- 51 Cheney R. U.S. Congress Senate Armed Services Commit-

- tee Hearings on the crisis in the Persian Gulf region, December 3, 1990;638-659.
52. Woodward B. *The commanders*. New York: Simon and Schuster, 1991;227, 261, 323
 53. Kissinger H. U.S. Congress. Senate. Armed Services Committee. Hearings on the crisis in the Persian Gulf region, November 28, 1990;259-301.
 54. Aspin L. U.S. Congress. House. Committee on Armed Services. Hearings on the military option: the conduct and consequences of war in the Persian Gulf, January 8, 1991;859-917
 55. Thomas E. The one true hawk in the administration. *Newsweek*, January 7, 1991;19.
 56. Ford GR. *A time to heal: the autobiography of Gerald R. Ford*. New York: Harper and Row, 1979;187-188
 57. Goodgame D. What if we do nothing? *Time*, January 7, 1991;22.
 58. Sciolino E. Envoy's testimony on Iraq is assailed. *New York Times*, July 13, 1991;A1, 4.
 59. Watson R. "I have had it." *Newsweek*, November 12, 1990;24-28.
 60. Thomas E. The reluctant warrior. *Newsweek*, May 13, 1991;18-22.
 61. Ball G. U.S. Congress. Senate, Armed Services Committee. Hearings on the crisis in the Persian Gulf region, December 20, 1990;701
 62. Bush G. Transcript of news conference remarks on Iraq crisis. *New York Times*, August 6, 1990;A7.
 63. Gordon M. Bush sends new units to gulf to provide "offensive option." *New York Times*, November 8, 1990;A1
 64. Apple R. Bush offers to send Baker on a peace mission to Iraq. *New York Times*, December 1, 1990;A1
 65. Bush G. President's January 8 letter to Congress. *Congressional Quarterly* January 12, 1991;70
 66. Walker R. Congressional debate on the Gulf war. *Congressional Record* January 10, 1991;H143
 67. Rosenthal A. Gorbachev seeking a way out in Gulf. *New York Times*, January 12, 1991;8
 68. Lauter D, Wright R. Gorbachev calls Bush with new initiative. *Washington Post*, January 12, 1991;A1, 16
 69. Cheney R. Quoted in: Baker sees swift move if U.N. deadline passes. *New York Times*, January 12, 1991;A1, 8.
 70. Biskupic J. Constitutional questions remain. *Congressional Quarterly* January 12, 1991;70
 71. Walker R. Congressional debate on the Gulf war. *Congressional Record* January 10, 1991;H143
 72. Tyler PE. Western health study in Iraq finds child mortality has nearly tripled. *New York Times*, October 22, 1991;A7
 73. Office of Management and Budget. United States costs in the Persian Gulf conflict and foreign contributions to offset such costs. Report #7, September 15, 1991
 74. United Nations. Report of the mission led by Sadruddin Aga Khan, Executive Delegate of the Secretary-General, to the Secretary-General on humanitarian needs in Iraq, S/22799, July 15, 1991. New York
 75. Webb S, Mathews R. Kuwait has paid most of Desert Storm debt. *Financial Times*, November 4, 1991;1
 76. Kostmayer P. Congressional debate on the Gulf war. *Congressional Record* January 11, 1991;H366
 77. Ostum CW, Job B. The president and the political use of force. *American Political Science Review* 1986;80:541-566
 78. Holsti O. Crisis, stress and decision making. *International Social Science Journal* 1971;23:53-76.
 79. Post J. The impact of crisis induced stress on policy makers. In: George A, ed. *Avoiding war: problems of crisis management*. Boulder, CO: Westview Press, 1991;471-496.
 80. Milbourn T. The management of crisis. In: Herman C, ed: *International crises: insights from behavioral research*. New York: Free Press, 1972;259-276
 81. Brunner R. *Decision making under time pressure*. Lexington, MA: Lexington Books, 1982
 82. Post JM. On aging leaders: possible effects of the aging process on the conduct of leadership. *J Geriatr Psychiatry* 1973;6:109-116
 83. Lubit R, Russett B. The effects of drugs on decision making. *Journal of Conflict Resolution* 1984;28:85-102.
 84. Abrams HL. Disabled leaders, cognition and crisis decision making. In: Paul D, Intriligator MD, Smoker P, eds: *Accidental nuclear war*. Toronto: Samuel Stevens, 1990;136-149
 85. Smith JE. *George Bush's war*. New York: Henry Holt, 1992
 86. Graubard SR. *Mr Bush's war*. New York: Hill & Wang, 1992;8.
 87. Abrams HL. "The president has been shot": confusion, disability and the 25th amendment on the aftermath of the attempted assassination of Ronald Reagan. New York: WW Norton, 1992.