Sagan, S. D. and K. N. Waltz (1995). <u>The spread of nuclear weapons : a debate</u>. **New York, W.W. Norton.**

Bottom Line: Where Waltz uses structural theory to argue that nuclear weapons (along with bipolarity) were the major difference that kept the world free of major wars during the Cold War, and that the spread of these weapons is likely to contribute to further stability; Sagan counters with organizational theory to argue that the spread of nuclear weapons is dangerous. Basically he argues that military organizations and their biases are likely to lead to preventive wars, unstable deterrence and even accidents and/or unauthorized use of nukes. Sagan provides the bulk of his evidence for his fears from the U.S. case, citing the relative wealth of data, but also examines other countries, esp. the former Soviet Union. Basically, Waltz looks at states constricted by the international system; Sagan at organizations constricted by their own bounded rationality, parochial interests, routines, filters, myopia, etc.

CHAPTER 1: "MORE MAY BE BETTER" (WALTZ)

Introduction
Vertical Proliferation = Buildup
Horizontal Proliferation = Multiple countries = Spread
Nukes will spread as they have in the past, but slowly.

The Military Logic of Self-Help Systems
Prevalence of peace (lack of major wars) since WWII indicates ability of post-war system to absorb changes, contain conflicts. Biggest changes were from multipolar to bipolar, conventional to nukes. States are in anarchy, principle of action is self-help.
Two methods of dissuasion: defense, deterrence. (See Snyder's piece.) Nukes are good if make deterrence and defense better, bad if make compellence and offense better. Offense/Defense differentiation also helps (See Jervis.)
Nukes improve deterrence and defense because:
1. War between nuclear states -> deescalation due to fear of escalation. Therefore nuclear states can only score small victories; big ones -> fear.
2. Nuclear states are more careful due to high expected costs.
3. Deterring through nukes increases security more than conquest of territory, so states won't fight to increase security.
4. Defending states gain credibility when attacked, since they have more will to use nukes.
5. Certainty about relative strength makes war less likely.
6. Outcome of war is more certain.We stop thinking about running risks and start worrying about how to avoid them.
7. Defeat is no longer distant, and no longer is expected to bring limited damage.

What Will the Spread of Nuclear Weapons Do to the World?
Nuclear Weapons and Domestic Stability
Two fears: first, states will become tyrannical in order to control nuclear weapons; second, states may lose control.
   Responses:
Possession of nukes slow arms races down.
Building arsenals has a long lead time. Only stable gov'ts can do it.
Internal instability would not lead to nuke war (who would they aim at?)
Even if they fired it, it would be internal and therefore not an int'l problem.

Nuclear Weapons and Regional Stability:

In what ways may actions and interactions of new nuke states differ from old ones?
1. May come in hostile pairs and share a border. Nothing new; USSR/China.
2. Radical at home -> radical abroad? Usually doesn't happen; PRC and USSR were only briefly radical abroad.
3. Gov't and societies in new states may not be well rooted. So? Rulers still won't fire them; they're still sensitive to costs.
4. Some fear may not come in hostile pairs; deterrence may be fuzzy. Not the case with nukes; fear of retaliation from anyone nuclear is good enough.
5. Civil control of military may be minimal. But military likes uncertainty even less than civilians.
What about being set off anonymously, for blackmail, or in a combined nuke-conv attack? Anonymity is not certain, and retaliation is; blackmail is only plausible where vital interests are threatened; nuke offensives are deterred by response possibilities. [Waltz double-flips himself on p.17, where he claims that "The use of nuclear weapons by lesser powers would hardly trigger them elsewhere." But then there's no deterrent!]

Deterrence by Small Nuclear Forces

The Problems of Preventive and Preemptive Strikes

It's difficult; it hasn't happened yet, except by Israel on Iraq. Consider two stages of development: an early stage where they don't have any capability, and a later one where they might have a capability. During the first stage, it could work; but the state could just rebuild. The second stage is deterred. Moreover, they're easy to hide, and so difficult to destroy.

Requirements of Deterrence

Deterrence requires:
1. Survivable weapons (2nd-strike)
2. No requirement for launch-on-warning.
3. Command & Control must be reliable (low chance of accidental use)

These are easy. Weak forces can deter the strong since "unacceptable damage" is actually pretty low.

The Credibility of Small Deterrent Forces

Credibility requires:
1. Physical: can they build and protect a deliverable force?
2. Psychological: Are physically feasible threats psychologically plausible?

Why carry out a threat that is irrational once it fails?
1. Schelling - There is always a possibility that the deterrer is irrational.
2. Brodie - Powers will act very carefully in the presence of awesome dangers anyway.

Moreover, immoderate behavior (w.r.t. the vital interests of another) make the threats of others credible. So actions at the periphery are safe, but at the core not.

The Problem of Extended Deterrence

Deterrent threats are credible if:
1. Interests threatened are vital.
2. Political stability prevails in area covered. (Must be an outside threat)

Will attackers be conservative [risk-neutral or risk-averse]? Hitler would have been deterred in 1939 from a nuclear threat. How about countries in retreat (Germany 45)? First, authority of rulers diminishes (e.g. Hitler ordered poison gas to be used and it wasn't) Second, no nuclear state will ever be pushed to conventional decisive defeat.

Arms Races Among New Nuclear States

New nuclear states are likely to decrease military spending because:
1. Nukes alter dynamics of arms races if deterrent logic is dominant (i.e. if no one has 1st strike)
2. Deterrent balances are inherently stable; you don't need to compete. (e.g. France, PRC, UK)
3. W/nukes, you don't need to have a conventional arms race.

States w/nukes can safely shrink their borders, since they won't need defense in depth anymore. So Israel can give back Golan Heights/West Bank.

The Frequency and Intensity of War

Presence of weapons makes war less likely. States are deterred because they don't know how much damage they will suffer (but it will be a lot.) States can punish without winning wars. Wars will not become more intense, since responses will inevitably be metered: a failed deterrence threat is followed by a calibrated response that restores the deterrence threat. Ultimately, deterrent strategies promise less damage than war-fighting strategies because:
1. Deterrent strategies promise less damage.
2. Wars must be carefully limited.
3. Prospective punishment need only be proportional.
4. Failed deterrence -> calibrated response -> deescalation.

The Recent Spread of Nuclear Weapons

North Korea: Why worry about offense? No one has figured out how to use them in this fashion. North wouldn't invade South anyway. Nuclear weapons make states more cautious.

Pakistan: Removing fear of India by having nukes -> peace.

Peace has become the privilege of states with nukes; war the province of states without them.

Conclusion

What Follows from My Analysis?

Best way to prevent countries from getting nukes is to guarantee security of those countries. There will be no deluge of countries wishing to have weapons; many could but don't. Many states are secure; they don't need them. Policy should be suited to individual cases, sometimes pushing against nukes, sometimes quietly acquiescing. We need to look at the interests of the other countries.

What Does the Nuclear Future Hold?

W/more nuclear states, the world will have a promising future because:
1.   Int'l politics is self-help and remain so.
2.   Balance of US/USSR terror is indestructible. Lesser states can do little to disrupt the equilibrium.
3.   Nukes make miscalculation difficult. cf Angell 1914 - war will decrease because it is costly - now this is actually true.
4.   New nuclear states will feel same constraints as current states.

CHAPTER 2: "MORE WILL BE WORSE" (SAGAN)

I. Central Arguments

A. Military organizations (orgs) are likely to lead to deterrence failures and deliberate or accidental war, due to their:

1. common biases
2. inflexible routines
3. parochial interests

B. Future nuke states may lack strong, positive civil control

1. current and emerging proliferators have weak civ control
a. e.g., Ukraine, N. Korea
2. means that A. l-3. Are more influential

II. Rational Deterrence Theory and Org Theory Compared

A. Rational Deterrence Theory requirements for stable nuke deterrence

1. no preventive war while one state has nukes and the other is in the process of acquiring them
2. both states must develop assured 2nd strike capability
3. arsenals must not be prone to accidental or unauthorized use (p 51)

B. Org Theory

1. Large orgz fn within a severely "bounded" or limited form of rationality
a. routines
b. satisfice
(1) "rather than searching for the policy that maximizes their utility, they often accept the first options that is minimally satisfying" (p 53)
c. myopic
d. goal displacement
(1) "often become fixated on narrow operational measurements of goals and lose focus on their overall objectives"
e. filters information w/the biases and jargon, values, etc., of that org
2. complex orgs commonly have multiple, conflicting goals, and the process by which objectives are chosen and pursued is intensely political" (p 53)

C. Some potential fears resulting from Org theory

1. professional military people tend to favor preventive war, and offense

a. such views could influence the probability of a nuclear attack during the transition period of an early arms race
2. professional militaries may not in fact deploy survivable 2nd-strike nuke forces
3. professional military orgs may not always help prevent accidental and unauthorized use

III. Preventive War in the Transition Period

A. "[M]ilitary Officers are predisposed to view preventive war in particular in a much more favorable light than are civilian authorities" (p 56)

1. bcz of self-selection and socialization, military people are far more likely to see war as more likely in the short-term, and inevitable in the long run
2. consider "victory" in a strict military sense
a. less emphasis on diplomatic, moral or domestic political costs
3. biased toward offensive (see footnote p 57 for cites)
4. military tends to focus near-term
a. i.e., winning the war, not managing the postwar world
5. military officers tend to focus on military goals
a. i.e., not the politicians' task of managing the post war world [sound repetitive? It is!] (p 57)

B. Evidence on Preventive War from the U.S. Case

1. during Truman and Ike, sr military officers advocated preventive war against USSR
a. some striking evidence pp 58-59
b. e.g., "Project Control" study 1953-1954 of U.S. Air War College
(1) plan to control Soviet airspace and threatening massive bombardment unless they withdrew from EE, etc.
c. Ike rejected it because prev. war on USSR would be too costly politically, even if it succeeded militarily
(1) note there was no moral objection (p 61)

C. Preventive War among New States

1. Pakistan-India (pp 6263)
2. Ukraine-Russia (pp 63-64)
a. if their relations seriously deteriorate, Russia will be tempted to strike preemptively to take out what nukes [if any] Ukr has left

IV. Interests, Routines, and Survivable Forces

A. Will nuclear powers build invulnerable forces?

1. Waltz's arguments: yes
a. not much needed
b. no rational nuke power would permit all of its forces to be vulnerable to first strike; small and light, can be hidden easily
c. [Sagan doesn't emphasize this point] the key question is not can we take their nukes out, but what happens if a few survive and are counter-launched
2. Sagan: maybe not
a. Waltz says "fuzzy thinking" caused U.S. and USSR to build up their arsenals far beyond what was necessary for MAD
b. Sagan: couldn't "fuzzy thinking" also cause orgs to build inadequate deterrents?
(1)military orgs likely to resist the non-sexy/-favored defense of nukes at expense of other weapons
(2)new missions are resisted
(3)org'l plans may not require invulnerable forces
(a) i.e., if planned for preventive war
(4)mil routines may simply be poor

B. Evidence from U.S. Case

1. Mil resisted development of new wpn systems until civilian review board end-run them
a. SLBM development was resisted (pp 69-70)
b. ICBMs, too!

C. Will New Nuclear Powers Build Survivable Forces?

1. China
a. developed nukes in 1964, reliable 2nd strike force only in early 1980s
(1) despite active conflict w/USSR 1968-1969, incl Soviet nuke threats
2. Egypt screwed up royally in June 1967, with org'l plans allowing the Israelis to destroy a 2-to-l air force advantage in hours (p 73)
3. N. Korea

V. Organizations, Accidents, and Proliferation

A. Normal Accidents by Charles Perrow predicts that boundedly rational orgs will inevitably experience serious system accidents when they exhibit two structural characteristics:

1. high interactive complexity
2. tight coupling (p 76)

B. The Limits of Safetv, Scott Sagan

1. measures taken to improve safety are highly problematic
a. redundancy adds complication
b. politics of blame
c. culture and socialization -> excessive pride, disdain for outsiders
(1) -> culture of cover-ups

C. The U.S. Nuclear Safety Experience

- bottom line: there were numerous near-accidents and only limited org learning resulted. You gotta read this stuff.
1. CMC; Arab-Israeli War (Oct 1973); SAC's B-52 in Greenland (not too convincing)

D. New Nuke States Will Face even More Danger

1. lack org'l and financial resources
a. e.g., Iraqi bomb design was extremely unstable (p 8 1)
2. covert nature exacerbates safety problems
3. countries w/volatile civ-military relations will have org'l biases in favor of readiness, not safety
4. their close to their adversaries and must :. face short warning times right away
a. unlike U.S. and USSR which first had hours (bombers), then 30 minutes (ICBMs), then 10 minutes (SLBMs)
5. less org'l learning
a. e.g., some "born" nuke powers (Ukraine, Belarus, etc.)
6. serious political and social unrest more likely
a. could -> accidental detonations
b. e.g., USSR moved nukes out of unstable regions quickly in 1991, compromising safety

VI. Conclusions: Bringing Orgs Back In

A. Waltz has confused what states should do with what they will do (pp 86-87)

B. IR needs more org (great footnote #89, on p 88, w/several examples)

C. U.S. should continue non-proliferation work

1. adding more intellectual persuasion to technology and materials controls, etc.

CHAPTER 3: WALTZ RESPONDS TO SAGAN

I. Terrorists

A. Terrorists have long-term views [!?] (pp 94-96)

"The answers are obvious. [?] Terrorists have some hope of reaching their long-term goals through patient pressure and constant harassment. They cannot hope to do so by issuing unsustainable threats to wreck great destruction, threats they would not want to execute anyway" (p 96).

II. Countering Sagan

A. Accidents

1. new nuke powers will have fewer weapons, will guard those they have with "almost paranoiac zeal" (p 97)
a. smaller forces are easier to control
2. 3W leaders are hardy, ruthless, seldom war-prone, and hardly reckless (p 97)

B. Civilian control

1. it's not as strong in U.S. as Sagan claims
2. civilians are often more reckless than military officers
a. e.g., Crimean War
3. military leaders are not more reckless and war-prone (pp 107-108)

C. Second-Strike Forces

1. repeating earlier arguments, 2nd-strike forces need not be big

D. Uncertainty

1. "Sagan thinks I put too much weight on the beneficial effects of uncertainty. Yet the effectiveness of nuclear deterrence rests on uncertainty" (p 110).

III. Conclusion
A.We can't stop the spread of nukes anyway (p 112)
B."Deterrence is not a theory. Instead, deterrent policies derive from structural theory, which emphasizes that the units of an international-political system must tend to their own security as best they can" (p 112).
C."Moreover, deterrence does not rest on rationality, whatever that term might mean. By a simple definition, one is rational if one is able to reason. A little reasoning lends to the conclusions that to fight nuclear wars is all but impossible and that to launch an offensive that might prompt nuclear retaliation is obvious folly. To reach those conclusions, complicated calculations are not required, only a little common sense" (p 113).
D."Efforts should concentrate more on making large arsenals safe and less on keeping weak states from obtaining the small number of warheads they may understandably think they need for security" (p 113) .

CHAPTER 4: SAGAN RESPONDS TO WALTZ

Introduction
Two errors: ethnocentrism -> other states will be worse, and optimism -> assume other states will be better. Waltz's error is the second.

The Roots of the Disagreement
S&W agree that: nukes are very destructive, and that states *should* behave as Waltz claims they will: be cautious, place a high priority on safety, and build secure 2nd-strike.
S&W disagree in how the states *will* behave. Waltz assumes all states will act in the same way. Sagan assumes that mil + other gov't orgs are an important intervening variable between statesmen & states.W assume there is little for states to learn. S argues that there are many things to learn in building their nuclear systems.

Accidents: Are They Likely?

Before TMI, Challenger, Bhopal, Chernobyl, these systems considered to be low-risk. Organizational problems made the accidents much more likely. Same is true of nukes. Waltz claims:

New states will not have accidents because they will have small arsenals. All else being equal, yes. But accidents are also a fn. of tech characteristics of weapons and org characteristics of arsenal.

Will fear retaliation. Yes, leader's desire is to avoid this. But states will have incentives to loosen control to increase survivability. small arsenals -> lg. incentives to launch-on-warning. Empirics: on the + side, India/Pakistan keep weapons in basement; on - side, they alert them in crises.

Will learn over time (since takes a long time to buildup). Not true of "born nuclear" states. Plus learning how to operate safe nuclear forces is difficult.

Civilian Control and Preventive War

S&W disagree on:

How fast potential attackers will think that a state has 2nd-strike capabilities. W claims only a small number of weapons is needed. S responds that this didn't deter US military leaders from advocating pre-emptive attacks on USSR.

Over whether civ/mil leaders differ in cost attitudes. W claims mil officers are conservative. S agrees, but says that this makes them likely to attack pre-emptively.

Second-Strike Forces

W claims that states will have incentives to build 2nd-strike. S says this is true, but org difficulties will prevent them from doing so; plus states tend to protect forces predictably.

Imagining the Future

Uncertainty is good in that it increases deterrence (might be used), but bad in that it also decreases the chance that they will be used. Some states have attacked conventionally nuclear states (Syria/Israel 73, Argentina/Britain 82, Iraq/Israel 91). In particular, Iraq having nukes is problematic.

Imagining the Past

W claims that deterrence will re-assert itself after a conventional invasion via a limited response. But looking at mil orgs in US, three problems: 1)US plans did not contain a controlled response option for most of the Cold War, 2)SAC had dead-man's switches in B-52s if crews were killed [now THAT's unnerving.], 3)US calculations did not take into account firestorms after blasts, and thus actual damage was miscalibrated. If US is bad, new states may be worst.

Conclusions

Challenge is to create a future in which gov'ts, orgs, and citizens think it best to remain non-nuclear. Evidence is good: Argentina, Brazil, S.Africa all have stopped their programs. Ukraine, Belarus, Kazakhstan have agreed to give up their weapons. N.Korea has permitted inspections. Demand-side management is best. US should help to shape alternative security arrangements, should lead by example. Short-term goal is small and safe arsenals; long-term is abolition or int'l control.

Back to Theory

S uses org theory; W uses neorealist structural theory. Different lenses lead to different predictions. S hopes W is right. But nukes are controlled by orgs, not states or leaders.