



Proliferation Complexity: The Intersection of Policy, Operations, Media, Intelligence, and Science

A Rapporteur Report

July 7-9, 2009
U.S. Naval Postgraduate School
Monterey, California

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In Cooperation with the Naval Postgraduate School (NPS)
and the James Martin Center for Nonproliferation Studies (CNS)

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I. Introduction

From 7-9 July 2009, government officials, civilian analysts, military officers, academics, and security experts gathered at the U.S. Naval Postgraduate School for the sixth annual Monterey Proliferation Seminar. The seminar addressed the topic of “Proliferation Complexity: The Intersection of Policy, Operations, Media, Intelligence, and Science.” The Defense Threat Reduction Agency’s Advanced Systems and Concepts Office (DTRA-ASCO) sponsored the event, which was hosted by the Naval Postgraduate School’s (NPS) Center for Contemporary Conflict (CCC) in cooperation with the James Martin Center for Nonproliferation Studies (CNS).

This report is intended to serve as an aide memoir for participants of the conference, and presents the range of issues discussed and the nature of those discussions. The conference was held under the “Chatham House Rule,” meaning that individuals spoke on a not-for-attribution basis, in order to encourage lively discussion and debate. The report therefore does not include all presentations, particularly those that contained classified material. Panel summaries are intended to provide an overall sense of the discussion topics, but do not comprehensively address the topics discussed or indicate agreement on the listed topics amongst conference participants. Two graduate students from the James Martin Center for Nonproliferation Studies, Daniel Cunningham and Daniel Johnson, were the rapporteurs for the conference and compiled this report.

The conference focused on five functional areas, and each panel adopted an interdisciplinary approach by incorporating presentations by experts with varied backgrounds. Presenters spoke for approximately twenty minutes each, with a question and answer period following the conclusion of each panel. The meeting began with opening remarks by Dr. James Wirtz, Dean of the School of International Graduate Studies at NPS, Mr. James Russell, Senior Lecturer in the Department of National Security Affairs at NPS, Dr. William Potter, Director of CNS, and Dr. Mike Wheeler, Director of DTRA-ASCO.

These speakers observed the following about the conference:

- DTRA is celebrating its 10th anniversary. DTRA’s think tank, ASCO, is trying to find solutions for some of the most intractable problems in nonproliferation.
- The focus of the conference is both timely and important due to the recent Russian Summit, the upcoming NPT Review Conference, the Obama administration’s commitment to nonproliferation and global zero, North Korean and Iranian proliferation concerns, Cooperative Threat Reduction developments, and the growth of informal approaches to nonproliferation such as the Proliferation Security Initiative.
- NPS’s CCC is a bridge between the intelligence community, the academic world, and the fleet. The *Strategic Insights* website receives 40,000 hits per month, most of which go to the quarterly journal publication.
- CNS is a leading global repository on nonproliferation. Many nonproliferation experts come from CNS, and Monterey Institute students studying at CNS receive

- interdisciplinary training in nonproliferation.
- Original nonproliferation ideas are needed to combat new threats. To explore new ideas the list of presenters is a who's who in nonproliferation, with a diverse audience from the operational, intelligence, scientific, academic, and media communities.

The introductory speakers also laid out the following conference themes:

- How do we address the role of nonproliferation in a changing strategic environment?
- Nonproliferation requires the integration of multiple disciplines into the field. Language specialists, lawyers, intelligence agents, and academia all have equally important roles. Students and professionals should have training in multiple fields.
- Experts are expected to study very specific areas and can become stuck in their "silos". Each field develops different protocols and adheres to different standards. This conference is an opportunity to "mix it up" and meet someone outside of your discipline in order to learn how he or she thinks.
- Time is precious for senior officials in government. Therefore, nonproliferation experts must learn to convey information in a way that catches their attention.

II. Conference Summary Report

This report attempts to present the range of issues discussed at the conference titled *Proliferation Complexity: The Intersection of Policy, Operations, Media, Intelligence, and Science*, and identifies a number of central themes. It does not intend to capture the exhaustive list of proposals and comments made by its participants, nor does it claim to reflect any agreement among the participants on the themes listed below.

Opening Presentation:

- **Omniviolence and violence interdependence have altered the international relations theory debate.** The argument was presented that prior to 11th September 2001, international relations theory held that states were perceived as the primary actors in international affairs. Following the 9/11 terrorist attacks in the United States and the anthrax letters, a second great debate began and Cold War-era positions on international relations theory changed. The new debate has three characteristics: 1) Deterrence is wounded since it is more difficult to deter non-state actors; 2) The world is no longer state centered; and 3) The threat to political liberty is now part of the debate. Growing violence interdependence—technological changes that increase the potential destructive power of violence—further influence the new debate. A world with both nuclear weapons and terrorism leads to a high level of violence interdependence, resulting in a hierarchy among states, which leads to despotism and anarchy.
- **In order to escape anarchy, states must move toward a modified one world constitutional government.** Current solutions to escaping anarchy are still stuck in realist and liberal mindsets, effectively projecting the hierarchical form of the state onto the world level. The theory of republicanism encompasses and eclipses both realism and liberalism, offering a solution called negarchy—an authoritative yet constrained position between anarchy and hierarchy. Negarchy can be achieved through the formation of a one world constitutionalist government, which would prevent a dramatic increase of unit level hierarchy and preserve political liberty.
- **A one world government is not inevitable.** Someone asked what happens if proliferation and omniviolence stop. In that case, it was argued that there is no need to exit anarchy and form a one world government. In order to reach that scenario, the world would need a nuclear control regime with a thickening of institutional control. The regime must be generalized globally through use of best practices, shrinkage in the total quantity of fissile material, and other checks and balances.

Focus Area #1: Diplomatic Approaches to Proliferation: What Works, What Doesn't

- **The United States must lead in formal and informal arms control and nonproliferation arrangements if they are to be successful.** An argument was presented that the Bush administration neglected legal approaches to arms control and nonproliferation, and that U.S. leadership is needed if progress is to be made at the 2010 NPT Review Conference, the Conference on Disarmament (CD), and with additional CTBT ratifications. If the United States and other NWS move toward fulfilling their disarmament obligations under article VI of the NPT, this will help convince other states to cooperate with nonproliferation initiatives and place the United States in a better position to facilitate a successful 2010 NPT Review Conference.
- **Details on counting for the new START treaty will be difficult to resolve.** The new treaty calls for 1,500-1,600 warheads contained within 500-1,100 strategic launchers, and someone argued that this pattern of setting ranges in treaties is a bad practice. It was also noted that the current START treaty counts the ability to deliver warheads instead of the actual number of warheads, meaning strategic weapons that carry conventional warheads are counted under START. The United States will try to exclude conventional strategic weapons from counting while Russia will try to include them, in order to constrain the U.S.'s stronger conventional strategic forces. In addition, there is disagreement on preserving the telemetry encryption ban and determining upload potential.
- **Informal regimes provide an avenue for arms control outside of formal approaches.** A move toward informal approaches to arms control is taking place, as exemplified by the Proliferation Security Initiative (PSI), the Global Initiative to Combat Nuclear Terrorism (GICNT), UN Security Council Resolution 1540 (UNSCR 1540), the Presidential Nuclear Initiatives (PNIs), and the preliminary negotiations for the Moscow Treaty. These arrangements may offer greater speed and flexibility, but may also lack an underlying legal mechanism. One participant questioned whether informal mechanisms would be harder to implement at the domestic politics level because they would lack the status of treaty law. The discussion indicated this may not always be the case, as domestic consensus on the need for proliferation prevention in countries such as the United States means that informal mechanisms can complement existing legal measures rather than conflicting with them.
- **Myths or misconceptions may surround informal approaches to arms control.** The argument was presented that three such "myths" exist: that informal approaches undermine traditional regimes; that informal approaches are inherently weaker than formal, legally binding structures; and that informal approaches are new inventions. The argument was advanced that informal approaches support and compliment traditional regimes because they are more flexible and responsive to the adapting characteristics of proliferators. In addition, it was argued that informal nonproliferation mechanisms have existed at least

since the Australia Group formed in the mid-1980s.

- **Although the CD plays an important role in arms control and nonproliferation, it has encountered serious obstacles.** The CD is not a UN body and controls its own rules and agenda, highlighted by a ten-item Decalogue of goals for disarmament. It was argued that because negotiators refuse to adjust the Decalogue goals for fear of losing ground in the disarmament fight, consensus and progress within the CD are difficult to obtain. In addition, members' frustration has grown due to the use of veto power by CD members, highlighted by the difficulty in advancing the Fissile Material Cut-off Treaty (FMCT). However, there was a recent positive development at the CD when North Korea did not object to the 29 May 2009 adoption of the program of work.
- **Reporters play a role in the nonproliferation regime by exposing both good and bad information.** It was asserted that there are three tempering factors in media reporting of proliferation issues: reporters must dumb down information for the public; they tend to be overwhelmed by the volume of work; and good reporters are a vanishing breed. Quite often, reporters' sources are selective leaks from government insiders. Sometimes this information is good, exemplified by the Vinca HEU removal case. When the information is bad, as highlighted by the Iraq aluminum tubes case, the media also have a chance to correct the record by exposing false and misleading information. Ultimately, reporters require good sources and not all news outlets and journalists are equally capable of accurately covering complex proliferation issues.

Focus Area #2: Forecasting Nuclear Proliferation: Approaches, Problems, Past Lessons

- **The history of the accuracy of proliferation forecasting is a mixed bag.** It was argued that, historically, forecasting vertical proliferation has been reasonably accurate, and that forecasting horizontal proliferation since Chinese acquisition of nuclear weapons has also been relatively accurate. However, there were surprises, including the extent of vertical proliferation that took place between the United States and the Soviet Union, the Cuban Missile Crisis, the underestimation of Iraq's weaponization progress prior to the First Gulf War, the overestimation of Iraq's progress leading to the 2003 U.S. invasion, and the 1998 Indian nuclear test.
- **Forecasting after national shocks typically results in worst-case scenarios.** It was contended that after the Sputnik launch, proliferation estimates were inflated and might have been influenced by the alarmist mood of public figures. After 9/11, worst case scenarios proliferated again due to a lack of moderating voices, possibly leading to the pre-Iraq war intelligence misestimates. Another panelist expressed concerns that NIE estimates are now too cautious. This participant believed that Iraq war overestimates, and the subsequent political fallout resulted

in a pendulum swing from being too aggressive to being too conservative.

- **The nuclear renaissance may lead to nuclear proliferation and/or nuclear terrorism.** It was pointed out that aspiring entrants into the nuclear power club generally possess a less developed infrastructure and have higher corruption indices compared to current nuclear power countries. In addition, six of the states interested in acquiring nuclear power are on the top-ten list of countries with the highest number of terrorist incidences. In order to manage the nonproliferation challenges of new countries possessing nuclear power plants, it was argued that supplier states must utilize prospective states' participation in nonproliferation arrangements as preconditions for support. In addition, if states withdraw from the NPT they should be required to return the nuclear material they obtained through participation in the treaty back to its supplier.
- **Expectations for what intelligence can predict may be unrealistic.** It was contended that the Intelligence Community (IC) is held to a higher forecasting standard than are experts in other fields such as economics, even though the information available to the intelligence community is limited by the fact that states closely guard their nuclear secrets. The public does not make this connection, however, and believes the IC is broken due to 11 September and the lack of weapons of mass destruction in Iraq. It was argued that despite public assumptions, the IC is not broken and does not need fixing. Several participants agreed that there is a danger in trying to "fix" the IC because doing so may remove the latitude analysts need to make predictions.
- **The role of NIE estimates has changed.** One participant claimed that during the Kennedy and Johnson administrations, NIE estimates drove diplomatic initiatives, and were hugely consequential in the formation of the NPT, the Limited Test Ban Treaty, and engagement with the Soviet Union on arms control efforts. Post Cold War they have been used to prompt military instead of diplomatic engagement, raising the stakes for the consequences of inaccurate estimates. Another participant argued that there is a damaging misnomer that the IC is in the business of providing "actionable" intelligence.
- **Current theoretical models and forecasting vocabulary cannot completely and accurately explain proliferation.** The argument was advanced that although basic models, such as realism, are helpful in explaining state behavior, no proliferation "chain theory" is completely supported on a historical basis. Security by itself, for example, is not a sufficient reason for states to seek nuclear weapons because not all states that face high-level security threats pursue nuclear weapons. Additionally, "doomsday" vocabulary is abundant within the nonproliferation field. Terms such as "tipping point" and "cascade" make proliferation seem inevitable and irreversible, but this is not objectively supported.
- **The distinction between hedging and latency is debatable.** Participants disagreed on the relative importance of hedging and latency, with one participant

claiming there is a significant difference between Iran's deliberate efforts to reduce the time it would require to produce a nuclear weapon, and Japanese latency. Another participant argued that policymakers care little for this distinction and are more concerned with a specific technical timeline. One person argued, however, that intentions matter and "good guys" do not proliferate, although another disputed the criteria for classifying "good" versus "bad" guys.

Focus Area #3: Verifying Nonproliferation and Arms Control Agreements

- **The Additional Protocol (AP) has provided greater authorities to the IAEA in certain countries, but it has failed to strengthen the overall compliance system because so many states have refused to adopt it.** The revelation of Iraq's clandestine nuclear program in the early 1990s demonstrated that the IAEA needed more teeth for its inspections program and led to the development and adoption of the AP. Yet attitudes surrounding the necessity of the AP continue to vary among states. Some states, pointing to Article III of the NPT, feel strongly that ratification of the AP should be mandatory. Other states are wary of the tool and believe steps must be voluntary. One participant also argued that the AP's effectiveness is unproven, even though the implementation of other strengthened safeguards has proven helpful in revealing nuclear activities in Egypt, South Korea and Syria. The AP has not yet enabled discovery of the most worrisome undeclared nuclear activities, such as a covert weapons programs, perhaps because countries with such programs refuse to adopt the AP.
- **The International Monitoring System (IMS) has improved considerably since the 1999 U.S. debate over CTBT ratification.** One participant claimed that the IMS, which is typically used for geological purposes, can pick up explosions as small as a truck bomb and can differentiate among earthquakes, implosions, and explosions. The IMS easily picked up the DPRK tests in 2006 and 2009, which was an improvement from the lower sensitivity exhibited by the system during the Indian and Pakistani tests in May 1998. Nevertheless, the most important form of monitoring continues to be on-site monitoring, which will not be possible unless the CTBT enters into force, and even then in only limited circumstances.
- **The CTBT verification regime may not be able to secure on-site inspections.** A participant argued that securing on-site inspections through the CTBT regime will require too much evidence, and that the burden of proof will therefore be too high to successfully secure an affirmative vote from 31 out of the 51 states on the oversight body. This participant also worried that states could be charged with requesting an unfair inspection. One person presented a counter-argument that improvements in the IMS over the last ten years have increased its viability as a confidence-building tool. Another argued that if there is a suspected nuclear test, it should not be difficult to secure the 31 votes required for an inspection.

- **Transparency is not a substitute for monitoring.** There is a debate as to what extent transparency measures are substitutes for monitoring measures. One participant asserted that as with other arms control arrangements, one should follow the axiom of trust, but verify. Therefore monitoring, or the gathering of relevant information to assure compliance, must be routine in cooperative measures and agreements.
- **Determining whether noncompliance has occurred requires judgment.** When a state is in noncompliance, even in a perfect regime, the international community or a designated body must make the distinction between intentional and unintentional activities. A participant asserted that South Korea's nuclear activities, for example, were judged as unintentional and therefore resulted in no punishment. Cases of intentional violation, such as North Korea, are direct challenges to verification and require punitive responses.
- **Some participants worried that the CTBT could negatively impact the reliability of the U.S. deterrent.** One person stated that the CTBT is a major constraint on the U.S. ability to maintain the reliability of its nuclear deterrent. Another participant countered that the Stockpile Stewardship Program (SSP) was relatively new at the time of the 1999 Senate CTBT rejection, and that the SSP has since improved confidence in the nuclear stockpile and eliminated the need for testing
- **A strategy for CTBT ratification is needed.** A participant noted that although 33 countries still have not signed the CTBT, of the 44 countries with significant nuclear activity, all but nine have ratified. Therefore, the strategy for bringing in the remaining nuclear countries relies heavily on U.S. ratification of the treaty. If the United States ratified the treaty, China and Indonesia would be more likely to ratify, which would pressure Iran and other holdouts as the number of non-ratified countries became smaller and smaller. Another person noted that more difficult cases, such as North Korea, could potentially be circumvented by utilization of a legal mechanism that enables a treaty to be brought into force despite the non-ratification of one or two holdouts. Another individual said that the political value of decreasing the likelihood that Iran would test a nuclear weapon should be leveraged to convince holdouts to ratify the CTBT.

Focus Area #4: Attribution; Figuring Out Who Done It

- **Nuclear forensics is not foolproof.** An individual observed that there is a myth within the media that we have the capability to easily accomplish attribution through forensics, whereas forensics may provide insufficient data for attribution of an event. Due to this misconception, scientists must convey the limitations of forensics to policymakers, so that they will not expect to be able to base their policy decisions exclusively on forensics. Another participant raised the concern that international cooperation on nuclear forensics is nonexistent due to

classification. Participants also debated the validity of scenarios in which a state could "spoof" another state's weapons or fissile materials, and hinder the accurate investigation of a nuclear incident.

- **Forensic attribution is different from the political and legal attribution of a WMD event.** A participant asserted that a country may be able to forensically attribute a WMD event, but may be unable to do so politically or legally. Although science is an important contributor to attribution—political decision-making and prosecution will not be possible without it—science alone is not sufficient. The accuracy, reliability, and credibility of the evidence must all be taken into account before a political decision is made.
- **Government agencies will follow different processes during the pre-detonation and post-detonation phases.** It was presented that the pre-detonation phase would move at normal law enforcement and intelligence timescales and would not be handled publicly. The post-detonation phase would focus on characterizing and understanding the type of device used and would, conversely, be processed publicly. Successful attribution will require interagency collaboration: the IC must deliver information quickly, the FBI and DOD must expedite access to the site and provide transportation and a chain of custody for samples, and the national labs must operate on a 24/7 basis. Preparation requires regularly exercising all of the component programs, including an institutionalized review and feedback process similar to war-gaming. Preventing a second event would be paramount.
- **States will fall back on legal standards when making attribution.** An individual outlined three major issues that must be addressed when making attribution at a state level: evidence and inference, sovereignty, and legitimacy. Military and foreign partners, however, work in different legal systems and this will cause complications. In addition, a participant noted that evidence (which may be classified) would have to follow the Daubert Standard, meaning it must be scientifically reliable, accurate, and rest on a strong foundation.
- **Attribution efforts will be complicated by international politics.** Someone claimed that the process of attribution lacks effective international legal recourse. UNSCR 1540 does not have an enforcement mechanism, and as a result, unilateral action becomes a likely response. This will raise questions of sovereignty, and make it difficult to convince key international players to side with the prosecuting government. A participant also argued that a policymaker might decide not to make an attribution, despite forensic evidence, because it could be strategically unacceptable.
- **The media has a special role in the attribution process.** It was asserted that the media must question regular and well-established sources in the case of a nuclear explosion. Saturation media coverage, with visual images and no media in the actual area of the event, could result in misleading information. This could

therefore pressure decision-makers to prematurely respond or retaliate. A participant also observed that terrorists could claim attribution and threaten to attack another city every day or week. In this way terrorists could control the timeline of response and influence decision-making, possibly resulting in cascading ramifications including spontaneous urban evacuations.

Focus Area #5: Cooperative Threat Reduction: Prospects for Internationalizing the Program

- **Participants debated whether CTR should be “re-branded” to overcome stereotypes in recipient countries that it is a U.S.-dominated foreign aid program.** Some participants argued that the CTR name is tarnished, and should be changed to help facilitate a new model of genuinely collaborative CTR. However, other participants felt that the CTR name is essential for continued U.S. congressional support of the program, as there is remarkably bipartisan support for programs labeled as “CTR.”
- **To sustain CTR, the United States must apply the lessons it has learned over the history of the program.** It was proposed that the United States transform its donor relationships into collaborative partnerships. It is important to get local buy-ins; people are afraid to have radioactive wastes transported or imported into their area. Another participant claimed that NGOs could help because they understand the situation on the ground, often have better access, and provide a less bureaucratically oriented role. A panelist also noted that there is a strong need for a reduction in the turnover of U.S. government personnel involved in CTR, and an increase in personnel possessing relevant area and language skills.
- **The United States must use law as a tool for obtaining policy objectives.** Someone asserted that the United States is cognizant of using law from a defensive perspective, for example in its opposition to the International Criminal Court, yet neglects the use of law for offensive purposes. A participant argued that this is unfortunate, because law can be used to advance national security. For example, Treasury Department sanctions against companies doing business with Iran and North Korea have been powerful coercive tools.
- **Legal disputes have occasionally ground CTR to a halt.** An individual said that the House Armed Services Committee adopted several recommendations in the 2010 NDAA to remedy these problems. The person claimed that if these ideas are implemented it will result in a more agile, flexible, and responsive CTR capable of building sustaining relationships. These remedies are:
 - Grant congressional funding for CTR by utilizing limited notwithstanding authority.
 - Address the lack of co-mingling authority. Checks for CTR should be routed to CTR instead of into the general fund, thus making them exempt from the Miscellaneous Receipts Act.

- Reassess the CTR umbrella protection provision agreements that have made it difficult to reach liability agreements with foreign governments.
- **The future of the CTR biological weapons (BW) program is in doubt.** It was presented that a number of very large BW facilities in the Russian Ministry of Defense (MoD) never became a part of the CTR Program. Although CTR in the biosector in Russia is now nearly unworkable, the individual noted some successes in addressing low bio-security and safety levels in Central Asia and the Caucasus. The future of the CTR program in Iraq, however, looks bleak: few scientists will go there for training. It was also recommended that BW CTR be transferred to DHHS or the CDC, which would have better prospects of eliciting foreign cooperation than the Department of Defense as a result of their public health missions.

III. Appendices

Conference Agenda

Tuesday, 7 July 2009

Introductions and Preliminaries

- Dr. James Wirtz, Mr. James Russell, Dr. William Potter, Dr. Mike Wheeler, Cdr. Chris Bidwell

Opening Presentation

- Dr. Daniel Deudney, “Toward Modified Nuclear One Worldism: Omniviolence, Arms Control, and Limited Government”

FOCUS AREA #1: Diplomatic Approaches to Proliferation: What Works, What Doesn’t

- Ambassador Linton Brooks, “The U.S. – Russian Nuclear Negotiations”
- Dr. David Cooper, “The impact of informal approaches – PSI, GICNT and UNSCR 1540”
- Dr. Patricia Lewis, “The Once and Future Conference on Disarmament”
- Mr. Joby Warrick “Covering the Story”

FOCUS AREA #2 – Forecasting Nuclear Proliferation: Approaches, Problems, Past Lessons

- Dr. Michael Krepon, “Forecasting Proliferation”
- Dr. Scott Sagan, “Nuclear Power Without Proliferation”
- Dr. Zachary Davis, “Intelligence and Forecasting”
- Ms. Gaukhar Mukhatzhanova, “How Contagious is Nuclear Proliferation?”
- Mr. John Diamond, “Getting the Story right: The Challenge from a Media Perspective”

FOCUS AREA #3 – Verifying Nonproliferation and Arms Control Agreements

- Ambassador John Sullivan, “Australian Views of the Additional Protocol”
- Ms. Paula DeSutter, “Policy and Verification”
- Dr. Raymond Jeanloz, “CTBT Verification”
- Mr. John Lauder, “Intelligence and Verification”

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FOCUS AREA #4 – Attribution; Figuring Out Who Done It

- Dr. Jay Davis, “Nuclear Forensics”
- Professor Harvey Rishikof, “International Legal Issues”
- Dr. Randall Murch, “Science for Law Enforcement”

- Mr. John Diamond, “How the Media Covers the Story”

FOCUS AREA #5 – Cooperative Threat Reduction: Prospects for Internationalizing the Program

- Dr. Cristina Hansell, “Expanding CTR: Legal Challenges and Opportunities”
- Dr. Raymond Zilinskas, “CTR prospects in the BW Sphere”
- Professor Orde Kittrie, “International and domestic issues in expanding CTR”

Keynote Speakers

- Lt. General Hamid Khan
- Dr. Peter R. Lavoy

Thursday, 9 July 2009

Classified Presentations, SCI clearance required.

List of Speakers

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Independent National Security
Consultant
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