تطور اتجاهات الرأى العام الأمريكى
تجاه قضايا الأمن (١٩٩٣ - ١٩٩٥)
" دراسة مسحية "(*)

د. كيرى هيرون د. هانك جنيكينز سميث

مجلد (٥) العدد (٢) يناير ١٩٩٧

(*) تنشر هذه الدراسة بتصريح من معهد السياسات العامة بجامعة نيومكسيكو بالولايات المتحدة

د. كيرى هيرون هو المدير المشارك لمعهد السياسات العامة بجامعة نيو مكسيكو بالولايات المتحدة

د. هانك جنيكينز سميث هو مدير معهد السياسات العامة بجامعة نيو مكسيكو بالولايات المتحدة

تطور اتجاهات الرأى العام الأمريكى تجاه قضايا الأمن

١٩٩٣ - ١٩٩٥

دراسة مسحية

هذه هى الورقة الثانية فى الدراسة المستمرة عن تصورات الرأى العام الأمريكى لأمن مرحلة مابعد الحرب الباردة. وقد قدمت الورقة الأولى تحليلاً لمسح قومى أجرى فى أواخر عام ١٩٩٣ وأوائل ١٩٩٤، أما هذه الورقة، فتقدم نتائج مسحاً قومياً شمل ٢٤٩٠ فرداً من الشعب الأمريكى. والهدف من ذلك هو توضيح كيف يتبلور الرأى العام الأمريكى تجاه قضايا الأمن النووى فى فترة مابعد الحرب الباردة والكشف عن المحددات التى قد تؤثر على الحوار القومى فيما يتعلق بالسياسات الأمنية.

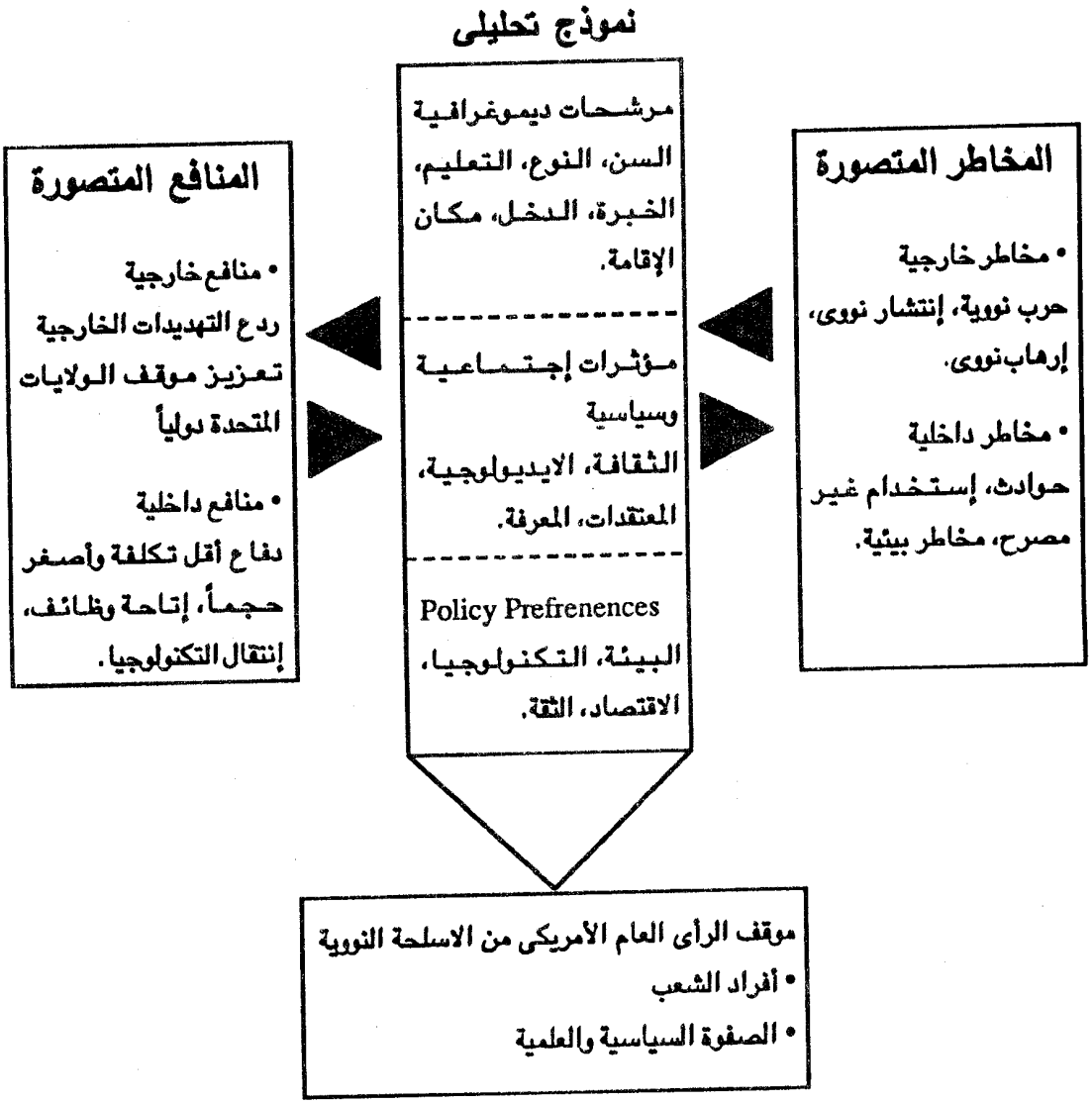
إن موقف الرأى العام من المسائل الأمنية إنما يعكس تفاعلات مركبة لمتغيرات مترابطة على ثلاث مستويات للتحليل: فردى، قومى، عالمى.

فعلى المستوى الفرى، يرتبط الأمر بالأمن الشخصى، الاجتماعى، الاقتصادى والنفسى للأفراد. وعلى المستوى القومى يتسع مفهوم الأمن ليشمل قضايا أكثر تعقيداً تتعلق با ولويات، السياسات المحلية والهوية القومية. ويتسع المجال أكثر على المستوى العالمى، ليتضمن المخاطر والمنافع المشتركة مثل الصراع الدولى، الصحة العالمية ومشاكل البيئة بأنواعها.

وتؤثر الاسلحة النووية على أمن الأفراد فى كافة هذه المستويات، لذلك فقد ركز التقرير على قضايا الأمن النووى؛ كيف تُعيد بعض الدول هيكلة ممتلكاتها النووية، الدرجة التى تشكل بها القدرات النووية خطراً على دول أخرى، إدارة المواد المستخدمة فى صناعة الاسلحة النووية كل هذا من الأمور التى لها الوزن والتاثير على الأمن.

وقد أوضحت نتائج المسح الذى أجرى خلال ٩٣، ٩٤ أن موقف الأفراد من الأسلحة النووية إنما يتكون على أساس حساب المنافع والمخاطر القائمة وتحاول هذه الدراسة قياس المتغيرات والعمليات الاساسية التى قد تساعد على توضيح كيفية تبلور موقف الرأى العام من الأمن النووى فى مرحلة مابعد الحرب الباردة.

ويشير المسح الأول إلى أن أهم المتغيرات التى يكون لها الأثر على موقف الرأى العام من الأسلحة النووية هى كما يبينها الشكل التالى:



ويوضح النموذج أن تقييم الجماهير للأمن النووى إنما يخضع لعملية موازنة بين المنافع والمخاطر. كما يوضح هذا النموذج أن عملية الموازنة تلك تتم فى إطار عدد من العوامل الخاصة بكل فرد على حدة، مثل السن، النوع، التعليم، مكان الإقامة، ..... الخ.

منهاجية التقرير

المناهج المستخدمة فى هذا المسح سبق واستخدمت فى العديد من الاستطلاعات الاخرى التى شملت قضايا معقدة. وتقوم هذه المناهج على اسس علمية تضم إطاراً نظرياً. وقد صممت

مناهج هذا المسح كى يستخدم بشكل متكرر، كما أن المقارنة مع نتائج الدراسة التى أجريت عام ١٩٩٣ دعمت الفرض بأن الدراسة نجحت فى تعريف وقياس بعض العلاقات التى تؤثر على إتجاهات الرأى العام بشأن الأمن النووى. جدير بالذكر أن الدراسة اقتربت من معظم المتغيرات من أكثر من جهة باستخدام العديد من الاسئلة المرتبطة.

أدوات المسح

كان الاساس هو ٧٣ سؤال تم طرحهم على المشتركين فى المسح، بالاضافة إلى ذلك، كانت هناك ثلاث مجموعات من الاسئلة تقسيمهم كالتالى:

- ٣٩ سؤال عن إنتشار الاسلحة النووية والإرهاب.
- ٣٣ سؤال عن التعاون العلمى الأمريكى - الروسى
- ٢٩ سؤال عن الأمن الشخصى والتكنولوجيا

وهذه المجموعات لايجيب المشترك الواحد عنها بالكامل بل يقوم الباحث بطرح مجموعة واحدة فقط من تلك المجموعات الثلاث عليه، بحيث يصبح المشترك فى النهاية وقد أجاب على ٧٣ سؤال + مجموعة واحدة فقط من الأسئلة الإضافية. هذا وتم توزيع هذه المجموعات الإضافية على المبحوثين كالتالى:

- ٨٤٤ مشترك اختيروا عشوائياً للإجابة على المجموعة الأولى.

٨٣٤ مشترك اختيروا عشوائياً للإجابة على المجموعة الثانية.

الـ٨١٢ مشترك المتبقين أجابوا على المجموعة الثالثة.

الفصل الأول: إدراك مخاطر الاسلحة النووية

إن فهم كيف ينشأ ويتبلور إدراك الشعب الأمريكى للأمن النووى فى مرحلة مابعد الحرب النووية لهو أمر أساسى لعملية إختيار السياسات فيما يتعلق بالحد من التسلح النووى، الميزانية النووية، والاستراتيجية القومية للقرن الواحد والعشرين.

ويقوم الفصل الثانى من هذه الورقة بعرض الأسئلة التى إختبرت إدراك الأفراد للصراع النووى – الإنتشار النووى والإرهاب وكذلك إدراكهم لطبيعة المخاطر الخارجية للاسلحة النووية وتحليل نتائج هذه الاسئلة كذلك يتعرض هذا الفصل للأسئلة التى اختبرت إدراك الرأى العام الأمريكى للمخاطر المرتبطة بإدارة الاسلحة النووية الأمريكية.

ولتوضيح مدى التغير الذى حدث فى عملية إدراك المخاطر خارجياً وداخلياً، تمت مقارنة إجابات هذا المسح مع إجابات المسح الذى أجرى عام ٩٣ على نفس الأسئلة.

دلالات المناقشات المركزة:

فى عام ١٩٩٣ أجريت ثلاث مناقشات مركزة focus group discussion حول القضايا الأمنية، تبعها ثمانية مناقشات من نفس النوع عام ١٩٩٥ ولعل أهم ماكشفت عنه هذه المناقشات مايلى:

– جمع معظم المشاركين على أن البيئة الدولية قد تغيرت كثيراً منذ إنتهاء الحرب الباردة، غير أن الآراء اختلفت حول أثر هذا التغير على الأمن القومى للولايات المتحدة. ففى الوقت الذى رأى فيه العديد من المشاركين إضمحلال الخطر النووى، وهو إتجاه تزايد فى الفترة مابين ١٩٩٣ و ١٩٩٥، ظل آخرون يشيرون إلى ما أدى اليه ذلك من صراعات وحروب فى مناطق مختلفة حول العالم. كذلك فقد رأى بعض المشاركين أن التدخل العسكرى للولايات المتحدة على المستوى الدولى لم يكن ضرورياً لتحقيق الأمن القومى الأمريكى.

– لوحظ أن المشاركين من الطبقات الإجتماعية والإقتصادية الاقل كانوا عموماً اكثر إهتماماً بالإقتصاد الداخلى والعنف الإجتماعى عن الاخطار العسكرية التى قد تتكلفها دول أخري. أما المبحوثين من الطبقات الإقتصادية والإجتماعية الأعلى، فقد كانت إهتماماتهم متوازنة بين القضايا المحلية والأخرى الخارجية، غير أن بعضهم أظهر عدم تفهمه لتدخل الولايات المتحدة فى كل من الصومال، هايتى، البوسنة.

- معظم المشاركين فى مناقشات عام ١٩٩٥ رأوا أن إحتمال وجود خطر نووى على الولايات المتحدة هو أمر بعيد الحدوث عنه أثناء فترة الحرب الباردة، لكن الأغلبية سجلت إنزعاجها من مخاطر وقوع الاسلحة والمواد النووية فى ايد خطرة.

من ناحية أخرى، رأى المشاركون فى الانتشار النووى وإمكانية قيام إرهاب نووى خطراً على أمن الولايات المتحدة والإستقرار الدولى. كما ظهر لدى المشاركين إدراكاً لتزايد عمليات تهريب المواد النووية دولياً وإمكانية بيع أسلحة أو مواد نووية روسية فى السوق السوداء الدولية.

- لم تظهر المناقشات شك المشاركين فى سلامة وأمن الممتلكات النووية الأمريكية أو فى إمكانية إستخدامها دون تصريح رئاسى. لكن البعض منهم أشار إلى عمليات التهريب وأن الولايات المتحدة غير محصنة ضد هذه العمليات.

- وفى سؤال عما إذا كانت الولايات المتحدة أكثر أو أقل أمناً عنه منذ خمس سنوات، أجاب معظم المشاركين سواء فى مناقشات عام ١٩٩٣ أو عام ١٩٩٥ بأن الدولة أصبحت أقل أمناً على الرغم من تفاوت أسبابهم لذلك. بعضهم أرجع الأمر لإنتشار الأسلحة النووية والارهاب والبعض الأخر أرجع الى استعداد الولايات المتحدة للتدخل فى صراعات اجنبية، والبعض الثالث رأى فى العنف الإجتماعى تهديداً مباشراً لأمن الأفراد، ومن ثم للأمن القومى الأمريكى.

- على كافة المستويات الإجتماعية والإقتصادية ظهر توافق بين إدراك الأفراد للمخاطر الداخلية والخارجية للأمن القومى، وأن هذه المخاطر تتزايد بشكل محير ومعقد عن تلك التى كانت قائمة أثناء الحرب الباردة. وعلى الرغم من وجود قلة متفائلة، تراوح إدراك أمن المجتمع لدى المشاركين مابين الشك والقلق البالغ.

قياس وتحليل إدراك المخاطر الخارجية:

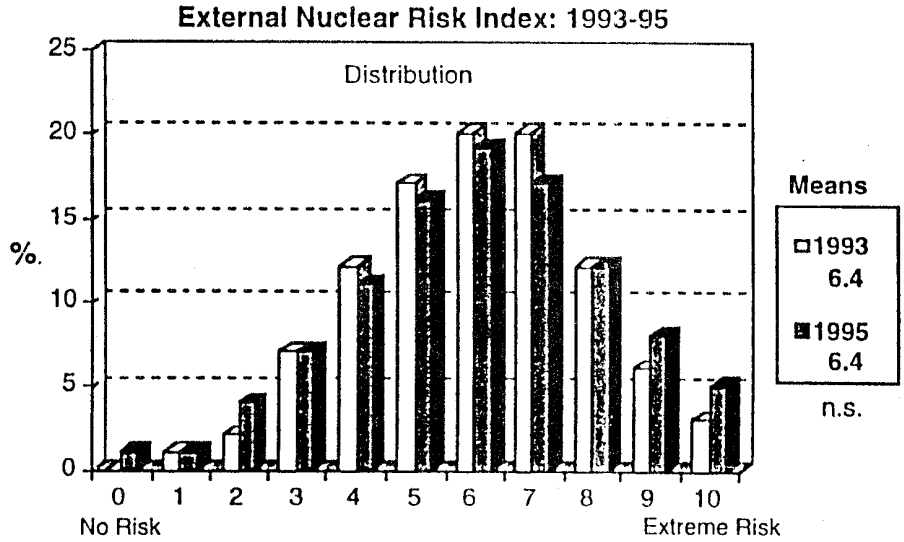
تم قياس إدراك المخاطر الخارجية للأسلحة النووية لدى الأفراد عن طريق طرح اسئلة تثير قضايا معينة وتطلب رأى المبحوث فيها على مستوى متدرج حيث تعنى الدرجة «صفر» لاخطر والدرجة «عشرة» خطر شديد.

وقد اختبرت الاسئلة القضايا التالية:

- الخطر من أن تتورط الولايات المتحدة فى صراع نووى.
- الخطر من حرب نووية تندلع بين دولتين أو أكثر.
- الخطر من إنتشار الاسلحة النووية.
- أثر الإنتشار النووى على الولايات المتحدة
- التهديد الحالى للإرهاب النووى
- تهديد الإرهاب النووى خلال العشرة اعوام القادمة

ويعرض الشكل التالى مقارنة لنتائج الإجابات عن هذه الأسئلة وقد دمجت فى رسم توضيحى واحد لمسحى ١٩٩٣ و ١٩٩٥.

Figure 2.10



وبتحليل هذه النتائج الإجمالية، وعلى خلاف ماكان متوقعاً من أن النتائج ستظهر إنخفاضاً تدريجياً فى إدراك الإخطار النووية الخارجية لمرحلة مابعد الحرب الباردة، أظهرت الآراء الجماهيرية إرتفاعاً ملحوظاً فى إدراك التهديدات التى تشكلها الأسلحة النووية الخارجية.

وبالإضافة إلى قياس طبيعة ودرجة إدراك التهديدات النووية، فقد تم قياس مظهر آخر يرتبط بتوقعات استمرارية هذا التهديد. فعلى سبيل المثال، هل يعتقد المجتمع الأمريكى أن الأسلحة النووية ضرورة مرتبطة بالنظام الدولى؟ وهل غير إنتهاء الحرب الباردة من إحتمال إمكانية التخلص من هذه الأسلحة؟ إن التساؤل حول إمكانية التخلص من الاسلحة النووية، والأخر يتعلق بإمكانية تدميرها.

وفيما يتعلق بالبعد الأول: الرغبة فى تدمير الاسلحة النووية والتخلص منها، فقد اشارت نتائج العديد من الاستطلاعات بما فيها هذا الاستطلاع إلى أن الشعب الأمريكى يميل إلى الرغبة فى التخلص من الاسلحة الممكنة إذا كان ذلك ممكناً.

أما البعد الثانى، وهو إمكانية التخلص من تلك الاسلحة، فقد أظهرت نتائج مسحيه ١٩٩٣، ١٩٩٥ إنقسام الرأى العام حول هذه الإمكانية بين موافق ومعارض بنسب متساوية تقريباً، ويتضح من هذه النتائج أن الرأى العام يدرك صعوبات التخلص من الاسلحة النووية وينظر إليها على أنها خاصية لازمة للبيئة الأمنية لمرحلة مابعد الحرب الباردة.

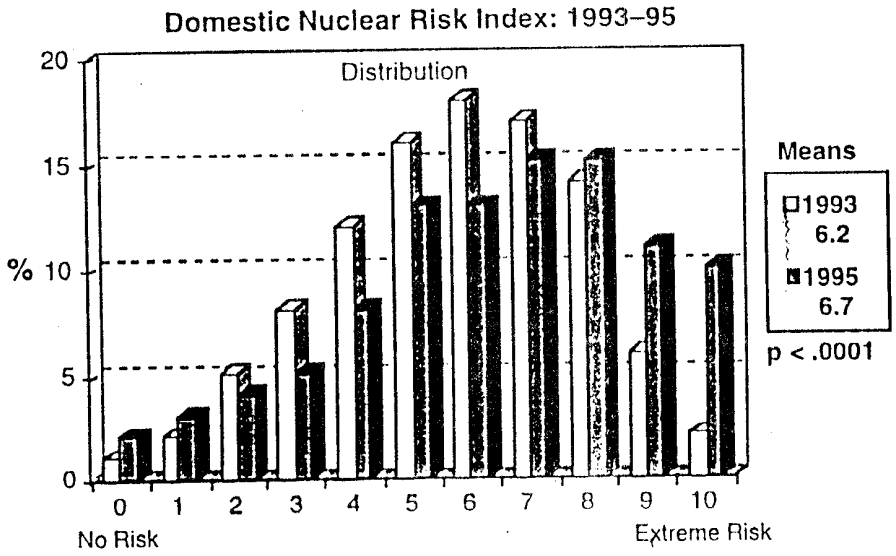
إدراك المخاطر الداخلية للأسلحة النووية

فيما يتعلق بهذا الجانب، صممت الأسئلة لتتناول القضايا التالية:

- مخاطر إدارة الاسلحة النووية.
- مخاطر نقل الاسلحة النووية داخل الولايات المتحدة.
- مخاطر تخزين الاسلحة النووية داخل الولايات المتحدة.
- مخاطر فك الاسلحة النووية فى الولايات المتحدة.
- مخاطر تخزين مواد نووية من أسلحة مفككة فى الولايات المتحدة.
- إحتمال وقوع حادث مرتبط بسلاح نووى مما يؤدى إلى إنفجار نووى غير مقصود.
- إحتمال استخدام الاسلحة النووية الأمريكية دون تصريح رئاسى خلال الخمسة وعشرين عاماً القادمة.

ويبين الشكل التالى نتائج الإجابات عن هذه الأسئلة:

Figure 2.22



وتظهر النتائج إرتفاعاً ملحوظاً فى إدراك المخاطر المحلية للأسلحة النووية فى كلا المسحين، مع تزايد هذا الادراك فى مسح عام ١٩٩٥.

خلاصة الفصل الأول

كان المتوقع خلال مسح ١٩٩٣ أن يعكس إدراك الجماهير بمخاطر الأسلحة النووية الخارجية اهتماماً منخفضاً خاصة بعد تفكك الإتحاد السوفيتى، كذلك كانت التوقعات بخصوص إدراك المخاطر النووية الداخلية وبعد مرور أكثر من نصف قرن من التعايش مع الاسلحة النووية وسباق التسلح النووى مع الإتحاد السوفيتى ألا ينظر المجتمع الأمريكى إلى ترسانته النووية كعامل تهديد وخطر.

لكن على غير المتوقع، وعلى العكس من كل ذلك، كشف المسح الأمريكى اعتبر مخاطر الاسلحة النووية والصراع النووى والانتشار والارهاب النوويين قد انتشروا وزادوا منذ إنتهاء الحرب الباردة كما أظهرت النتائج وبعد مرور عقود على إمتلاك اسلحة نووية ودون وقوع أية حوادث أو كوارث نووية، ان المجتمع الأمريكى مازال يرى فى وجود تلك الترسانة النووية خطراً محدقاً.

وفيما يتعلق بالتوقعات حول مسح ١٩٩٥، فكان المنتظر أن يظهر إنخفاضاً تدريجياً فى الإهتمام والقلق من المخاطر النووية الخارجية بإعتبار أن المجتمع قد اصبح أكثر اعتياداً على التغيرات التى صاحبت البيئة الأمنية الجديدة، كما كان من المتوقع أن يظهر ولو تغيراً طفيفاً فى إدراك المخاطر النووية الداخلية. ومرة ثانية وعلى عكس المتوقع، دلت النتائج أن قلق المجتمع من الأمن النووى الخارجى ظل مرتفعاً – كما زادت إدراكات المخاطر الداخلية فى الفترة من ١٩٩٣ إلى ١٩٩٥. وقد نبع القلق من المخاطر النووية الخارجية من إدراك تهافت بعض الدول على الاسلحة النووية منذ إنهيار الإتحاد السوفيتى السابق وكذلك الخوف من الإنتشار النووى والإرهاب. أما تزايد إدراك المخاطر الخارجية، فهو أمر عسير الفهم والتحليل خاصة مع عدم وقوع أية كوارث أو حوادث نووية منذ عام ١٩٩٣ وتبنى الولايات المتحدة لسياسة خفض الأسلحة النووية. ولعل السبب وراء هذا القلق المتزايد يرجع إلى الجدل المستمر حول بعض الأمور مثل تخزين مواد نووية طويلة الأجل، أو نقل بعض المواد النووية من كازاخستان إلى الولايات المتحدة، غير أن هذا لايفسر بشكل واضح السبب وراء الإرتفاع المتزايد فى إدراك المجتمع للمخاطر النووية الداخلية.

الفصل الثانى: إدراك منافع الأسلحة النووية

تناول هذا الجزء قياس وتحليل إدراك الرأى العام الأمريكى لمنافع الاسلحة النووية الأمريكية لتحقيق الأمن القومى، الوضع الدولى ومدى التأثير للولايات المتحدة، وما إلى ذلك مما يحقق منافع داخلية كان ذلك عن طريق طرح بعض القضايا على المبحوثين وقياس آرائهم فيها، منها:

- أهمية الاسلحة النووية للتأثير الأمريكى على الاحداث الدولية.
- أهمية الاسلحة النووية للإحتفاظ بوضع الولايات المتحدة كقائد دولى.
- أهمية الأسلحة النووية للحفاظ على الاسلوب الأمريكى فى العيش.
- أهمية الأسلحة النووية لبقاء الولايات المتحدة دولة عظمى.

وبتحليل نتائج الإجابات على هذه الاسئلة فى كلا المسحين (١٩٩٣-١٩٩٥) جاءت النتائج عل غير المتوقع، حيث رفع المبحوثون من قيمة الترسانة النووية كأداة لتحقيق الأمن القومى الأمريكى فى كلا المسحين مما يعنى إرتفاع إدراك الجماهير للمنافع الخارجية للاسلحة النووية الأمريكية فى مرحلة مابعد الحرب الباردة.

الدور المدرك للردع النووى

واحدة من أكثر المظاهر جدلاً والمرتبطة بإدراك أهمية الاسلحة النووية ودورها كرادع. ولعل التصورات المرتبطة بالردع النووى نشأت أول مانشأت أثناء الحرب الباردة، حيث كانت بالنسبة لعدد من صانعى السياسة ولقطاعات عريضة من المجتمع أكثر الحجج إقناعاً للحفاظ على الترسانة النووية وتطويرها. أما بعد الحرب الباردة، ولكى يُفهم كيف يتبلور إدراك الردع النووى الآن، قام مسح ١٩٩٥ بإدراج ثلاثة أسئلة صممت لتعكس كيف يدرك المبحوثون الردع النووى الآن، الأسئلة هى:

- مدى أهمية الردع النووى فى منع وقوع صراع نووى.

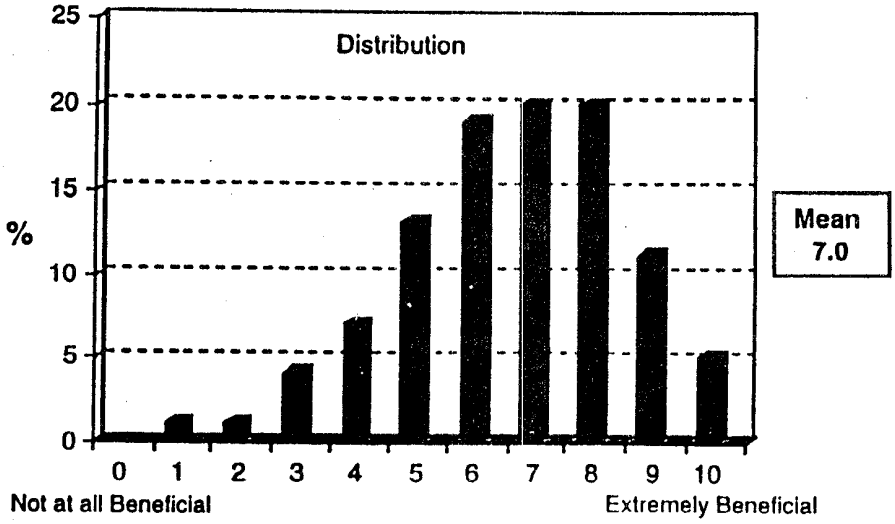
- أهمية الاسلحة النووية الأمريكية، لمنع دول أخرى من استخدام اسلحة نووية ضد الولايات المتحدة.

- إذا ماحصلت دول عديدة على اسلحة نووية فى المستقبل، كيف ستكون فاعلية الردع النووى فى منع وقوع أية حروب نووية فى أى مكان فى العالم.

هذا، وقد أظهرت نتائج الإجابات على هذه الأسئلة إدراك الرأى العام للردع النووى على أنه كان ومازال أداة مهمة حالت وتحول دون وقوع أى صراع نووى.

وبدمج نتائج هذه الأسئلة مع نتائج الأسئلة السابقة، نستطيع أن نصل إلى الشكل النهائى لإدراك الأفراد لمنافع الاسلحة النووية الأمريكية الخارجية ويوضحها الشكل التالى والخاص بنتائج مسح ١٩٩٥.

Figure 3.8 Expanded Index of Nuclear Weapons External Benefits: 1995



قياس المنافع الأخرى للأسلحة النووية

تضمن هذا الجزء قياس إدراك الأفراد للمنافع الأخرى التى تحققها الاسلحة النووية داخلياً مثل فاعلية الإنفاق، مايرتبط بالتوظف، القيمة الاقتصادية للدفاع المرتبطة بانتقال التكنولوجيا. وفى هذا الصدد، لم يتمكن المبحوثون من تسجيل إحكام واضحة فيما يتعلق بتلك المنافع، ولعل ذلك يرجع إلى عدم تمكننا من قياس الظاهرة بشكل مباشر.

لكن الإنطباع العام لدى المبحوثين هو أن تكلفة الإنفاق على الدفاع هى بصفة عمة ضرورة هامة للوظائف، الاقتصادية والمنافع التكنولوجية.

خلاصة الفصل الثالث:

سجل إدراك المبحوثين لدور الأسلحة النووية الأمريكية لتحقيق اهداف إيجابية على المستوى الدولى، قيماً متزايدة بالرغم من توقع إنحسار إدراك الأفراد لمنافع هذه الاسلحة لتحقيق تلك الأغراض. كذلك، وعندما سئل الافراد عن الردع النووى كوسيلة لمنع الصراعات، أيد المبحوثون ذلك واعتبروا الردع النووى وسيلة حيوية وفعالة لأداء هذه المهمة، بل ونظروا إلى الردع النووى بنفس درجة الأهمية التى اعتبروه عليها أثناء الحرب الباردة وبصفة عامة، وُجد أن المبحوثين اعتبروا أن الاسلحة النووية الأمريكية تحقق منافع اساسية للأمن القومى وللإقتصاد الداخلى والتى من شأنها الموازنة مع بعض المخاطر المدركة من تلك الاسلحة.

[8] The printed survey of UCS scientists was conucted between August and december 1993; the printed survey of national laboratory scientists was conucted between october 1993 and march 1994. Both are documented in Hank c. Jenkins - Smith, Richard p.Barke, and Kerry G.Herron, Public perspectives of nuclear weapons in the post - cold war environment: findings and analysis of the national security survey: perceptions and policy concerns 1993 - 1994, document ID: SAND 94 - 1265, Albuquerque, NM: Sandia National Laboratories .

[9] The question about technology transfers is the same that was asked only of scientists in 1993 . the wording was : " How do you rate the economic value of texhnology advances in defense industries for other areas of the US economy?" (B32). Answers were provided on a scale where one meant little economic value, and seven meant great economic value.

End Notes

[1] The same index in the 1993 study was titled " nuclear weapons utility index."

[2] For a discussion of alternative theories of nuclear deterrence see chapter four in kerry G. Herrom,1994,Full spectrum antiproliferation : intefrating nuclear proliferation theory and policy for the future, Ph.D.dissertation,Albuquerque,NM: University of New Mexico .

[3] A US national telephone survey of 1,000 adults conducted by market opinion Research for Americans Talk security , December 10 - 13, 1988 .

[4] A US national telephone survey of 1,000 adults conducted by market strategies for Americans Talk security , February 19 to March2, 1990 .

[5] A US national telephone survey of 1,000 adults conducted by market opinion Research for Americans Talk secuity , December 10 - 13, 1988 .

[6] A US national telephone survey of 1,000 adults conducted by market strategies for Americans Talk security , February 19 to March2, 1990 .

[7] For contrasting views of the economic influences of defense expenditures see (1) paul kennedy, 1987. the rise and fall of the great power : economic change and military confict from 1500 to 2000, New york: Random House; (2) Aaron L. Friedberg, 1991, "the political economy of U.S national security policy, " in U.S national security strategy for the 1990s, edited by Daniel J. Kaufman, David S. Clark, and Kevin P. Sheehan , Baltimore: Johns Hopkins University ; (3&4) Bruce Russett,1991 " Defense Expenditures and National wellbeng, " and stephen gill and david law, " Military - industrial rivalry in the global political economy, " both in international political economy : A reader, edited bu kendall w. stiles and tsuneo akaha, New york : Harper Collins.

general were important for jobs, the economy, and for technological benefits. Respondents from the general public in 1995 evalueated those benefits in much the same way that scientists did from the national laboratories that participated in our 1993 study, and very differently than did respondents from the Union of Concerned Scientists that participated in that same study .

Overall, we found that participants considered US nuclear weapons to provide substantial benefits for national security and for the domestic economy that may offset some of the perceived risks that we documented in Chapter Two .

Next , in Chapter Four , we will examine related policy preferences and spending priorities, and analyze relationships between those issues and our four indices of perceived external and domestic risks and benefits .

Note that by adding the question about the value of defence industry technology transfers to other areas of the US economy, the domestic benefit index increased by 1.2 points on a scale from zero to ten, indicating the relative weight respondents placed on technology transfers.

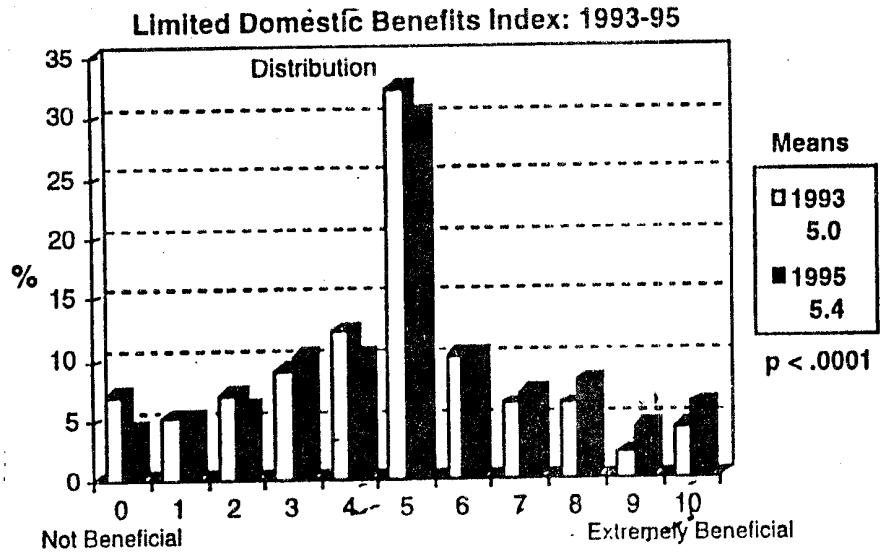
Section 3.4: Summarizing Perceptions of Nuclear Benefits

Participants in 1995 continued to attribute substantial value to US nuclear weapons for purposes of international in fluence, leaderstrip, and security . Instead of an expected de cline in public perceptions of the benefits of US nuclear assets for achieving and insuring US security objectives, our respondents reflected a substantial increase in perceptions of the external benefits of US nuclear weapons. When we asked respondents to evaluate nuclear deterrence specifically, they considered it to have been essential in preventing nuclear conflict during the cold war, and indicated that they thought nuclear deterrence remained important today and for the foreseeable future .

Opinion was divided about whether nuclear weapons reduce the need for other types of military forces. Participants seemed to understand that the two categories of military capabilities are applicable for different purposes, and they did not perceive important trade-offs to exist between nuclear and conventional forces .

Respondents were not able to render clear judgments about the domestic benefits that might be specifically associated with nuclear weapons, but that may have been because we were not able to measure the issue directly. Respondents did have strong impressions that defence expenditures in

Figure 3.12

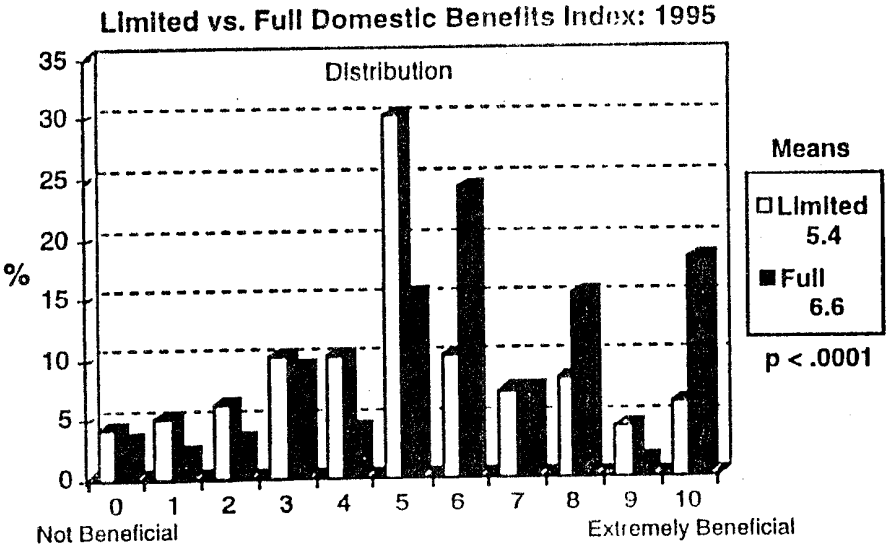


This comparison shows a significant increase since 1993 in the perceptions of the benefits associated with the cost - effectiuveness of nuclear weapons and the benefits of defence related employment (p<.0001).

In 1995 we added the third question dealing with the percived economic value of defence related technology transfers.[9] Figure 3.13 shows how adding the issue of technology transfers affected the 1995 domestic benefits index.

Fuigure 3.13 Limited vs. Full Domestic Benefits Index: 1995

Figure 3.13



Respondents from the general public in 1995 viewed the value of defence industry technology transfers in ways similar to the views of scientists from the national laboratories nearly two years previously. Both are in considerable contrast to the views expressed in 1993 by participants from the Union of Concerned Scientiusts .

Constructing an Index of Perceived Domestic Benefits

By combining perceptions of the cost - effectiveness of nuclear weapons for national defence, the benefits of defence related employment, and the economic value of defence related technology transfers, we can create an index reflecting respondent perceptions of domestic benefits associated with defence investments. Although this index is not limited exclusively to those expenditures associated with nuclear weapons, it still provides a useful tool both for comparative purposes and for combination with our measurements of the external benefits of nuclear weapons for achieving national security objectives .

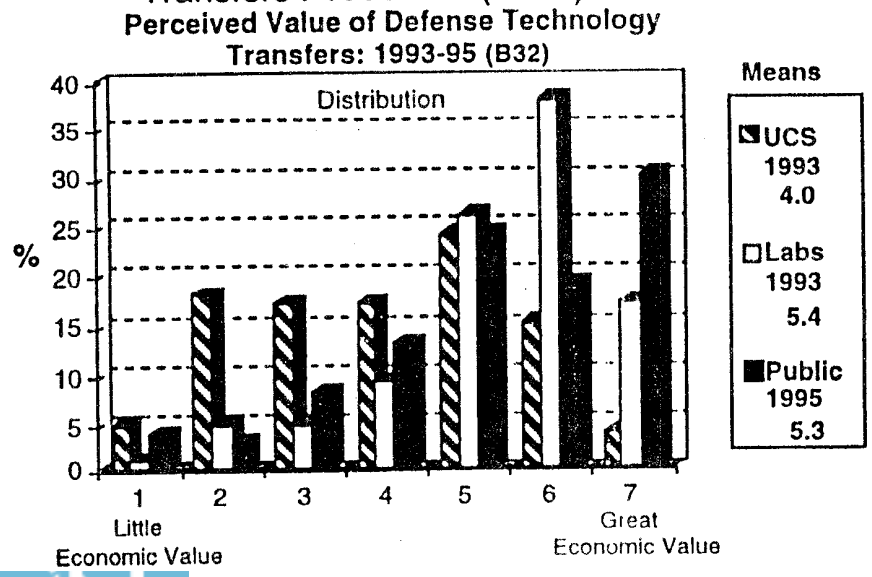
The domestic benefits index for the public sample in 1993 was less robust. It consisted of only the two questions addressing the cost - effectiveness of nuclear weapons for national defence and the benefit of defence related employment. The question of the economic value of defence related technology transfers was not asked of the general public in 1993 . A comparison of the domestic benefits index constructed in 1993 with the same two questions in 1995 is shown in Figure 3.12 .

Defence Technology Transfers

Our 1993 survey compared a number of views of the general public with those of two groups having higher levels of scientific expertise. To represent segments of the US scientific community that might hold a wide range of perspectives, in 1993 - 94 we sampled 1,155 randomly selected members of the Union of Concerned Scientists and 1,226 randomly selected members from the technical staffs of four US national laboratories. Because of the levels of specialized expertise resident in the two groups of scientists, we were particularly interested in their judgments about the value of technology transfers from defence industries to other applications. We did not ask respondents from the general public about this issue in 1993, but we did ask this question of members of the general public in 1995 . In both surveys we asked respondents to rate the economic value of technological advances in defence industries for other areas of the US economy, using a scale where one meant little economic value, and seven meant great economic value. Results from the two surveys are compared in Figure 3.11. Note that these data compare scientists ' views in 1993- 94 with public views in 1995. [8]

Figure 3.11 Perceived value of Defence Technology Transfers : 1993 - 95 (B32)

Figure 3.11

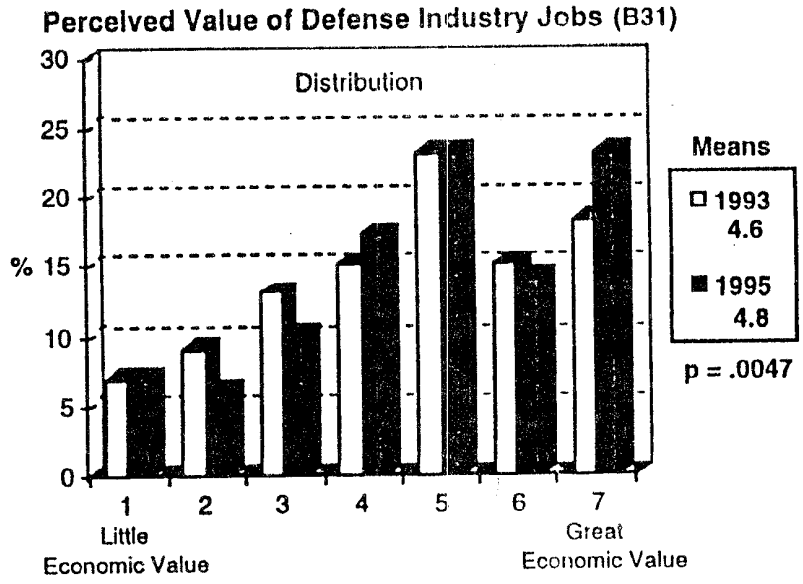


military restructuring and the public debate over base closures and the redistribution of defence assets as evidence of the link between defence investments, jobs, and domestic economic benefits, Other analysts argue that defence related

investments create jobs that are less productive for the economy than are investments in nondefence sectors.[7] To better understand public perceptions of the economic benefits of defence related employment, we asked respondents in 1993 and 1995 to rate the economic value of defence industry jobs in America on a scale where one meant little economic value, and seven meant great economic value. Figure 3.10 compares results.

Figure 3.10 Percelved Value of Defence Industry Jobs (B31)

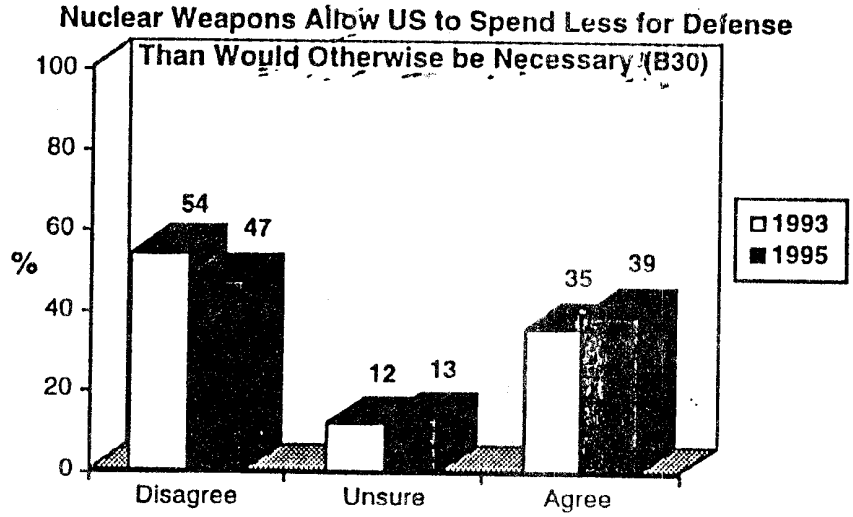
Figure 3.10



Defence - related jobs were perceived to provide important economic benefits, and those benefits were perceived to have increased significantly since 1993(p=.0047). However, we should note that this question does not separate expenditures for nuclear weapons capabilities from the larger category of overall defence investments. That distinction is difficult for expert analysts, and it is probably too specific for most members of the general public to be able to differentiate.

Figure 3.9 Nuclear weapons Allow US to spend less for defence Than Would Otherwise be Necessary (B30)

Figure 3.9



In each survey, most respondents did not perceive a trade - off in costs between nuclear and nonnclear security investment strategies, although there was some movement in opinion in that direction between 1993 and 1995. Results should not be interpreted as suggesting that respondents could not differentiate between nuclear and conventional capabilities and investments. Our findings indicate only that they did not perceive a strong trade - off between the two . Nuclear weapons did not appear to be associated with overall defence efficiencies in the view of most respondents .

Defense Industry Employment

The relationship between defence investments and associated economic impacts, such as jobs and consumer spending, is also a matter of debate. Some analysts argue that defence investments create jobs and infuse large numbers of defence dollars into local communities. They point to post- cold war

* " Reduce the number of nuclear weapons in our armed forces and replace them with nonnuclear weapons even this means paying more to maintain the same level of military strength " 45%

* " Reduce the number of nuclear weapons and do not replace them with nonnculear weapons, even if this means reducing our current level of military strength" 31%

* Don't know. 4%

These results suggest a preference among respondents for reducing the number of nuclear weapons, even if such actions result in higher defense costs. we should note that this question did not employ contingency valuation techniques that would have forced respondents to more carefully consider their willingness to spend more for defense, nevertheless it did provide some information about the ways that the public might perceive nuclear vs nonnuclear trade - offs .

We attempted to get at this issue more directly in both 1993 and 1995 by asking participants to respond to the following statement: " Having a nuclear arsenal means the US can spend less for national defence than would be necessary without nuclear weapons. " The scale of responses ranged from one, which meant strongly disagree to seven, which meant strongly agree. We compare grouped responses from both surveys in Figure 3.9 .

end of World War11. One aspect of that discussion relates to the degree that having nuclear capabilities affects requirements for other types of military forces. Informed security analysts have long understood that nuclear forces and forces conventional provide conceptually and qualitatively different capabilities that can be complementary but are rarely exchangeable. We wanted to know how members of the general public viewed trade- offs in nuclear and nonnuclear military investments, and how those perspectives might be evolving .

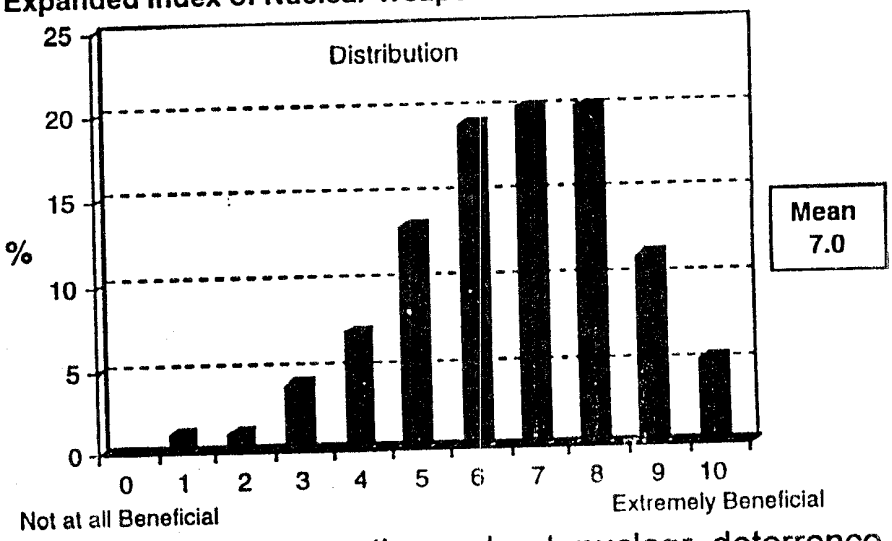
Two surveys during the latter years of the cold war provide useful insight about related aspects of this particular issue. In a 1988 national survey, Market Opinion Research asked the following question : " Have you ever read or heard that a conventional defence is more expensive than a nuclear defense: that is, having enough nonnuclear weapons to discourage an attack costs more than having the nuclear weapons needed to discourage an attack?"[5] More than half of the respondents (52 percent) indicated that they had not heard or read of such an assertion. Only 38 percent indicated they had heard that argument, and ten percent did not know or refused to answer. These results imply that the issue of cost - effectiveness of nuclear weapons is not one with which most of the general public was familiar .

A second insight is provided by a somewhat slanted question asked by Market Strategies in February 1990. This inquiry asked the folklowing : " Because nuclear weapons provide more defense for less money, our armed forces rely heavily on nuclear weapons. Some people say we should eliminate nuclear weapons even if it costs more: Which one of these three choices on nuclear weapons do you favor?"[6] (Response choices were randomized.)

* " Do not reduce the number of nuclear weapons in our armed forces " 21%

Figure3.8 Expanded Index of Nuclear Weapons External Benefits : 1995

Figure 3.8 **Expanded Index of Nuclear Weapons External Benefits: 1995**



Adding the three questions about nuclear deterrence increased the mean expanded benfits index value for the 1995 survey from 6.9 to 7.0, but the expanded index is not directly comparable to results compiled in 1993. However, both variations of measuring the perceived external benefits of nuclear weapons will be available for time - series analysis of data collected in future surveys .

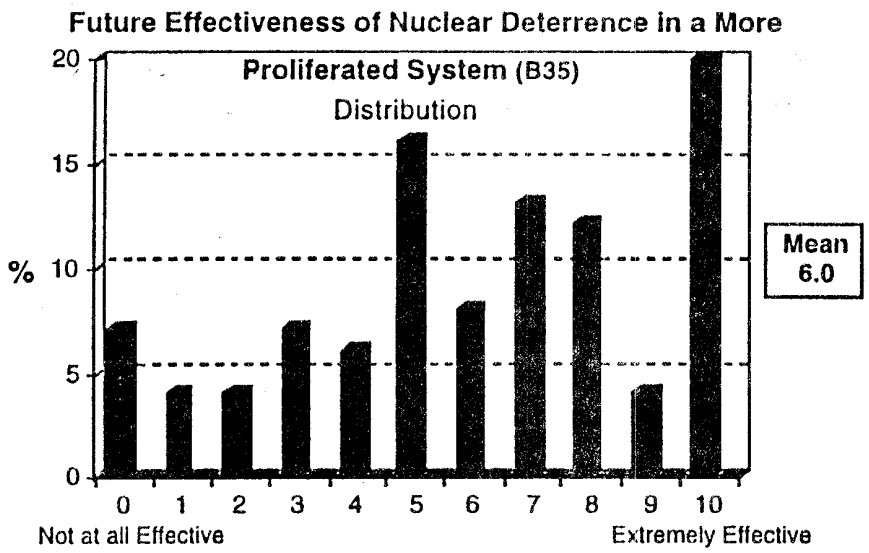
Section 3.3 : Measuring Other Nuclear Weapons Benefits

Nuclear vs. Nonnuclear Trade - Offs

The end of the cold war brought substantial restructuring of military forces both in the US and in the Soviet successor states. Debate about the levels and Composition of military forces is still ongoing, and one of the issues being debated is the appropriate mix of strategic nuclear capabilities and conventional forces. It is a continuation of debate and discussion about the most effective mix of nuclear and nonnuclear capabilities that has been under - way since the

Figure 3.7 Future Effectiveness of Nuclear Deterrence in a More Proliferated System (B35)

Figure 3.7



While somewhat lass sure that nuclear deterrence will hold in a more proliferated international system, most respondents still considered nuclear deterrence to have considerable potential for preventing future nuclear conflict .

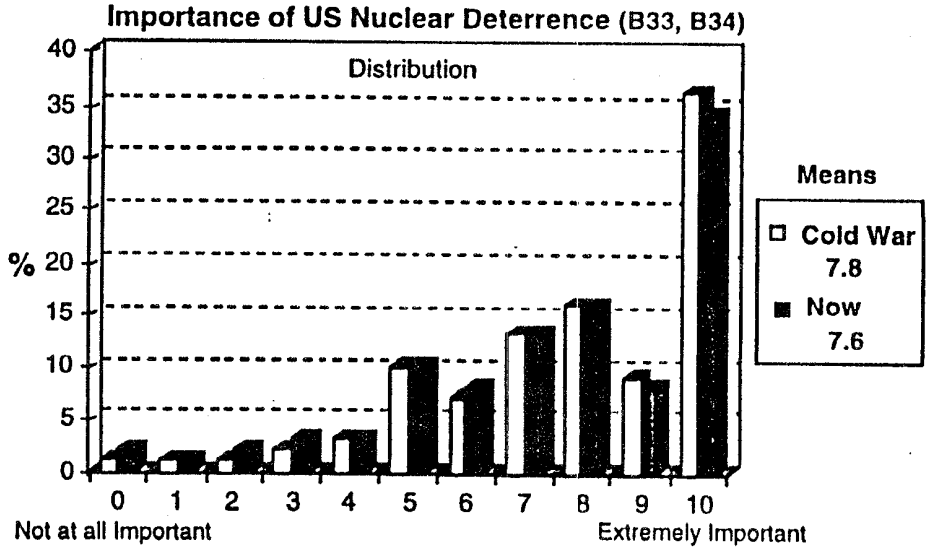
Expanding the Nuclear Weapons External Benefits Index

These new questions about the past, current, and future value of nuclear deterrence provide an opporunity for expanding and making more robust our nuclear weapons external benefits index discussed above. Combining the results of the three deterrence questions with results from the four questions displayed in Figure 3.5 yields the expanded index of external nuclear benefits shown in Figure 3.8 .

* " How important are our nuclear weapons for preventing other countriues from using nuclear weapons against us today ? " (b34) .

Results are compared in Figure 3.6.

Figure 3.6 Importance of US Nuclear Deterrence (B33,B34)



Respondents credited nuclear deterrence as being a very important reason that nuclear conflict did not occur during the cold war, and they continued to attribute a similar level of importance to the role of nuclear deterrence in preventing nuclear conflict in 1995. About one- third of all respondents rated the importance of nuclear deterrence in preventing open nuclear conflict -- both during and after the cold - war -- at the maximum value of ten .

Our thrid inquiry about nuclear deterrence addressed the potential of a more proliferated future. Using a scale where zero meant not at all effective, and ten meant extremely effective, we asked participants the following question: " If more countries acquire nuclear weapons in the future, how effective will nuclear deterrence be in preventing nuclear wars from occurring anywhere in the world? " 3.7 shows results.

Opinion Research asked the following question : " which do you thaink is most likely : that our nuclear deterrence will fail and we will have a nuclear war sometime in the future , or that nuclear deterrence will succeed and we will never be in a nuclear war? [3] Almost two out of three respondents (62 percent) felt that deterrencve would succeed, with 27 percent asnwering that deterrence would eventually fail.The remaining11percent did not know or chose not to venture an opinion.Assuming this sample population was representative, these findings indicate that in the latter stages of the cold war, the American public placed considerable confidence in Us nuclear capabilities for deterring nuclear war for the foreseeable future.

Another snapshot was taken in early 1990 . In the preceding year Eastern Europe had shaken off the political grip of the Soviet Union; poland had ended 40 years of communist rule; the Baltic states of Lithuania, Latvia, and Estonia had demanded autonomy ; and the USSR was coming unravled. A survey in February 1990 by Market Strategies asked the following question:" do you agree or disagree that our nuclear weapons have been essential in preventing a world war since the end of World War 11?[4] Again, 68 percent agreed, 26 percent dis- agreed, and six percent did not know or chose not to answer.

In 1995, four years after the disintegration of the Soviet Union the event that became the popular benchmark for the end of the cold war, we asked our respondents to judge the importance of nuclear deterrence. Our first two questions used a scale where zero meant not at all important, and ten meant extremely important, and they related perceptions of the utility of nuclear deterrence for preventing nuclear conflict during and after the cold war. Respondents were asked the following questions:

* " How important was nuclear deterrence in preventing nuclear conflict during the cold war?" (b33) .

Contrary to our expectations of a gradual decline in perceived value of US nuclear weapons for achieving national security objectives in the post- cold war security environment, our respondents placed a higher value on the US nuclear arsenal in 1995 than did our respondents in 1993. This increase in mean perceptions of external benefits is highly statistically significant ($p<.0001$).

The perceived Role of Nuclear deterrence

One of the most often mentioned (and most often argued) aspects relating to the perceived utility of nuclear weapons is their role as a deterrent to aggression or attack. Perceptions about nuclear deterrence were formed during the idelogical and philosophical struggles of the cold war, and arguments about the viabiliyt of deterrence were never empirically resolved because of the impossibility of proving why nuclear war between two nuclear weapons states has not occurred.[2]

However, for many US policy makers and for large segments of the US population, nuclear deterrence was the most persuasive (perhaps the only) rationale. for developing and maintaining a nuclear arsenal. To better understand how perceptions of nuclear deterrence might be evolving after the cold war, we included three questions designed to reflect how our respondents perveived nuclear today, how they thought about deterrence in retrospect, and how they viewed it prospectively .

Before reporting the results, it would be useful to look at data relating to public perceptions of nuclear deterrence during the latter years of the cold war and during the transition that accompanied its demise. Two surveys provide useful snapshots. Changes in the Soviet system were on the horizon in 1988 , but the East - west standoff was still intact. The soviet Union was fighting in Afghanistan, but in April of that year it agreed to withdraw its forces. President Reagan visited Moscow in late May, but little was accomplished. Mikhail Gorbachev was named President of the Soviet Union in October. A nationbal survey in December 1988 by Markett

By combining these results, we can create an index of perceived benefits of nuclear weapons for achiving US national security interests. The index includes responses to questions about the following issues:

* The importance of nuclear weapons for US influence over international events (B26).

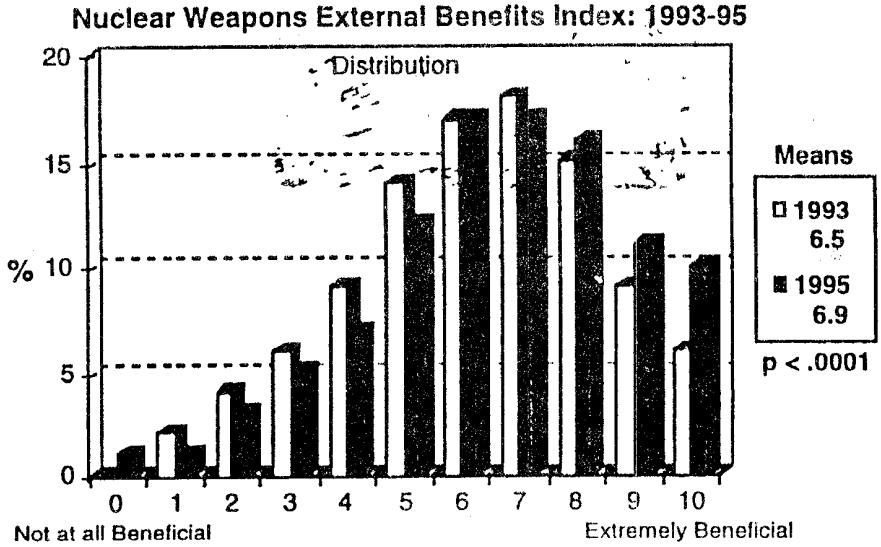
* The importance of nuclear weapons for maintaining US status as a world leader (B27) .

* The importance of nuclear weapons for preseving America's way of life (B36).

* The importance of the US remaining a military superpower (B27) .

Because we asked the same questions in 1993, a comparison of combined views can be made, as shown in Figure 3.5. [1]

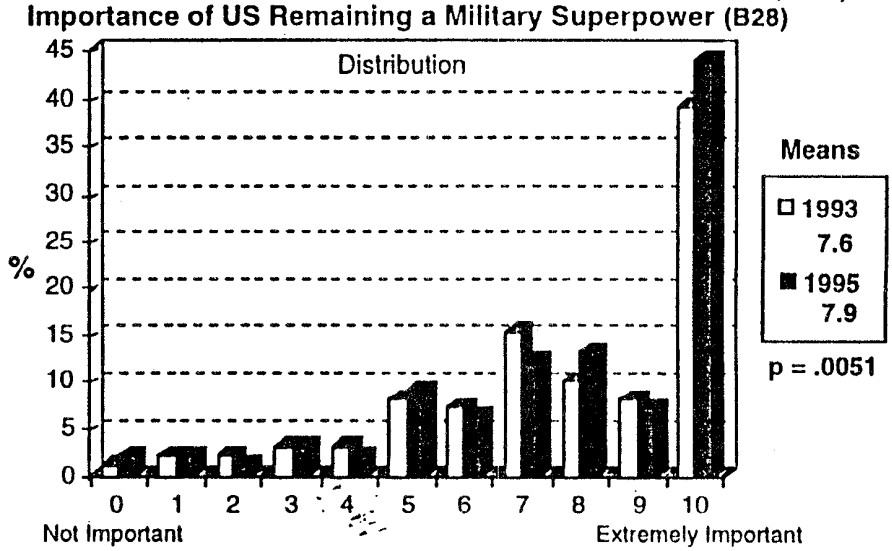
Figure 3.5 Nuclear weappns External Benefits Index:1993-1995



Imporrtance of Remaining a Military superpower

Our final question in this series asked respondents to make a judgment about the future by rating the importance of the US remaining a military superpower. Responses are shown in Figure 3.4.

Figure3.4 Importance of US Remaining a Military Superpower(b28)



Note the increase in the maximum value of the vertical scale compared to the previous charts. There seems to be little doubt that the American public attaches great importance to the US retaining its position as a military superpower. Fully 82 percent of all respondents rateed the value of remaining a military superpower above mid- scale, and nearly half of all respondents rated it at the highest end of the scale. Again, the increase in mean rating in the period from 1993 to 1995 is statistically significant (p=.0051).

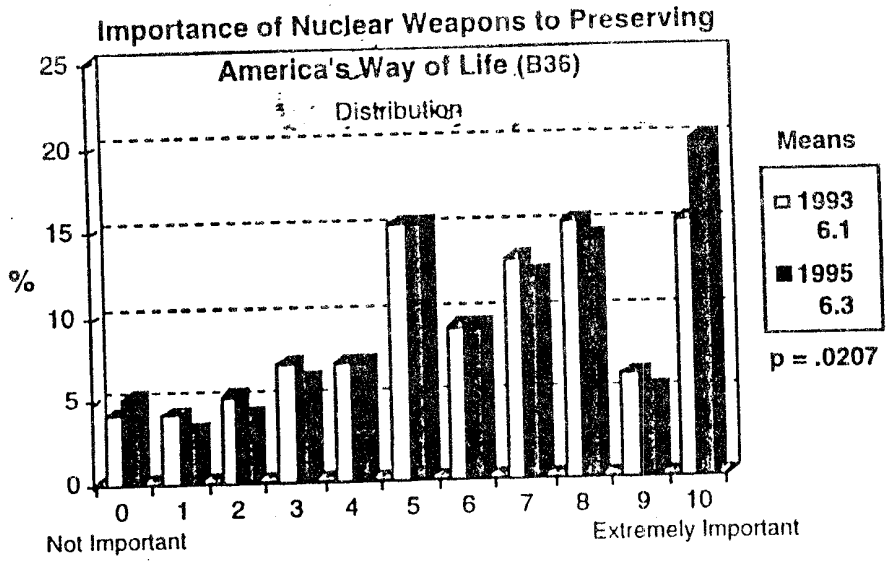
Constructing an Index of Perceived External Benefits

Importance of Nuclear Weapons to the American Way of Life

Our third question in this series inquired about the historical relevance of US nuclear capabilities by asking respondents how important they thought nuclear weapons have been to preserving America's way of life. We made no attempt to define or characterize America's way of life. Our objective was to determine how each participant related nuclear weapons to his or her individual concept of trhe American way of life, regardless of personal value judgments about the nature of US society. Figure 3.3 compares results of the 1993 and 1995 surveys.

Figure 3.3 Importance of Nuclear Weapons to Preserving

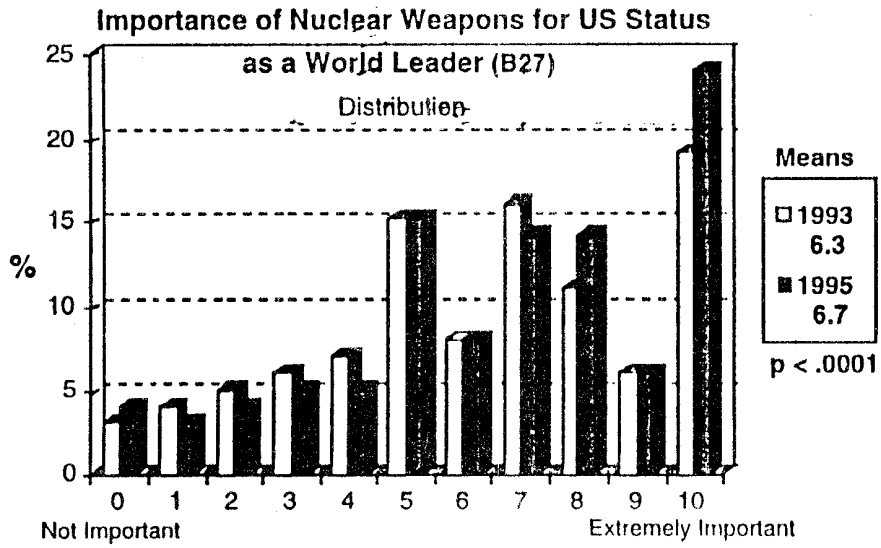
Figure 3.3



Results indicate that respondents in1995 continued to attribute great importance to the role of nuclear weapons in preserving American independence and security.In fact they rated the importance of nuclear weapons statstically significantly higer on average than in 1993 .

Figure 3.2 Importance of Nuclear Weapons for Us Status

Figure 3.2



It is interesting that four years into the post- cold war era, and two years after our last measurement, the modal response not only remained at the highest value (ten), but the portion of respondents selecting that value increased by five percentage points. The difference in means from 1993 to 1995 is highly statistically significant ($p<.0001$). From their answers to these two related questions, our respondents appeared to perceive an important relationship between nuclear weapons capabilities and US international influence and leadership . Rather than declining since the end of the cold war, their valuation of that relationship increased in the period from 1993 to 1995 .

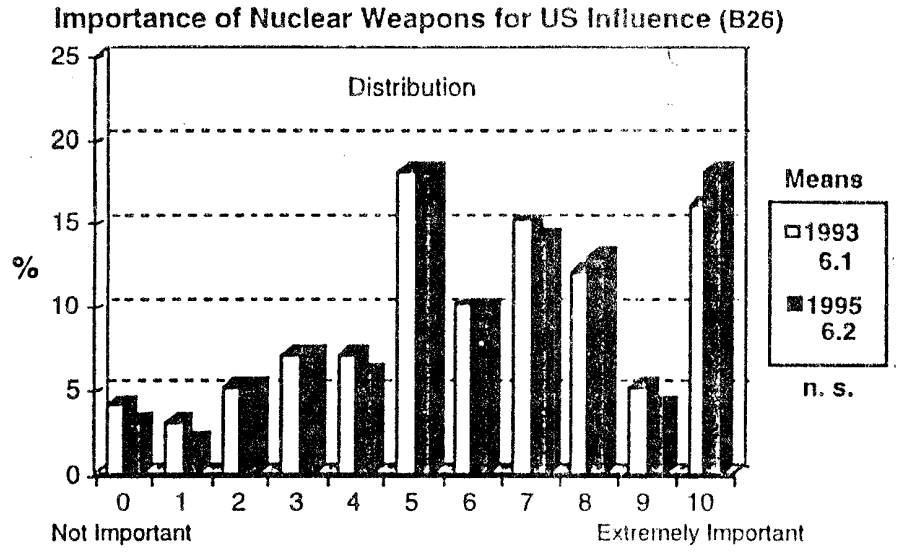
Section 3.2: Measuring Perceived Benefits of US Nuclear Weapons for National Security

Importance of Nuclear Weapons to US Influence and Status

We asked three questions about perceptions of the relationship between US Nuclear weapons and national interests. First, respondents were asked the following question: " How important are US nuclear weapons for US influence over international events? " We compare responses from our 1993 and 1995 surveys in Figure 3.1 .

Figure 3.1 Importance of Nuclear Weapons for US Influence (B26)

Figure 3.1



The high degree of consistency in distributions and mean responses indicates that little has changed in the substantial importance the public continues to place in nuclear weapons as an element of US international influence. Values were even higher when respondents were asked to judge the importance of nuclear weapons for maintaining US status as a world leader, as shown in Figure 3.2.

were of the opinion that as long as other countries have nuclear weapons, the US must also have them for deterrence purposes. Focus groups seemed confident of our ability to deter an overt nuclear attack on the US. But when asked whether US nuclear weapons can deter nuclear proliferation or terrorism, focus group members were divided, with some suggesting that nuclear deterrence is much more problematic in these regards, since nuclear retaliation against unknown terrorists might be so difficult as to make deterrence ineffective .

Potential benefits of nuclear weapons for domestic jobs, the economy, and technology transfers were nuclear to some fous group, and opinion was divided about whether and to what degree such influcences might be considered beneficial. One limitation derives from the difficulty of knowing the extent of investments that are made in nuclear weapons related categories, as opposed to other categories of defense spending, and the economic and technical consequences of those expenditures. There was little consensus about the natrure of domestic benefits associated with nuclear weapons capabilities. Focus group members could relate to military base closures and the economic effects of reduced spending and lost jobs in those communities where military facilities are affected . However, expeditures for ships, planes, tanks, and artillery designed to perform both conventional and nuclear roles cannot easily be categorized into either nuclear or nonnuclear investments. As a result, focus froup members were not able to relate specific investments in nuclear capabilities to economic outcomes .

Chapter Three

Evolving Perceptionas of the Benefits of Us Nuclear Weapons

Section 3.1: The Historical Role of US Nuclear Weapons

After the first half- century of the nuclear age, and after prevailing in the military, political, and economic competition with the Soviet bloc, how do Americans feel about nuclear arms ? On the whole, has nuclear weaponry been a blessing or a scourge? To what degree were nuclear weapons relevant to US security and influence during the cold war, and more importantly, how is their value changing in the post - cold war era? Did nuclear deterrence matter in the past, and does it matter to US security today ? Will it be needed in the future, and if so, for how long? Does the public perceive econmic and technical benefits to be associated with defense spending on nuclear and other military arms ?

Focus Group Indications

To gain impressions of public perceptions about external benefits of US nuclear weapons for national security, prestige, and influence, as well as perceived domestic benefits, we asked focus groups to discuss the pros and cons of nuclear weapons and how they might be changing since the end of the cold war. When asked about the past role of nuclear deterrence, there was widespread agreement that deterrence worked during the cold war. Most members felt that it was instrumental in preventing open conflict between the US and the Soviet Union. When asked whether the US continues to need nuclear weapons, there was even stronger agreement that nuclear weapons remain important to US security . When asked why nuclear weapons remain important now that the cold war is over, most discussants

[9] A US national telephone survey of 1,000 adults conducted by market opinion research for americans talk security, january 7- 14 ,1988 .

[10] A US national telephone survey of 1,000 adults conducted by market opinion research for the americans talk issues foundation between june 23 and july 1, 1991.

[11] A US national telephone survey of 1,000 adults conducted by market strategies for americans talk security between february 19 and march 2, 1990.

[12] A US national telephone servey of 1,000 adults conducted by CBS News/New York times, October 5-7, 1991 .

[13] Article VI of the Treaty on the Non- Proliferation on nuclear weapons states: " Each of the parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."

[14] A US national telephone survey of 1,000 adults conducted by CBS News/New York Times, October 5-7, 1991 .

[15] For survey findings about public attitudes concerning the foreign spent nuclear fules program and nuclear materials transportatinon issues see: (1) Amy Fromer, Hank Jenkins-Smith, Carol L. Silva , and John Gastil, 1995,Understanding public reaction to the foreign spent nuclear fuel return program: 1994 - 1995, Albuquerque, NM: UNM Institute for public policy, and (2) Hank Jenkins- smith, amy fromer, and carol L. silva, 1995, transporting radioactive materials: risks, issues, and public perspectives, Albuquerque, NM: UNM Institute for Public Policy .

End Notes

[1] See Chapter Seven for survey results regarding societal violence and personal security .

[2] See Appendix 2 for a more detailed report of 1995 focus groups. A discussion of 1993 focus groups can be foun in Appendix 2 of Hank C. Jenkins- Smith, Richard p. Barke, and kerry G.Herron, 1994, public perspectives of Nuclear Weapons in the post - cold war environment: findings and analysis of the antional security survey: perceptions and policy concerns 1993 - 1994, document ID: SAND 94-1265, Albuquerque, NM: sandia National Laboratories.

[3] In the 1993 study, external nuclear risks were referred to as nuclear threats.

[4] A US national telephone survey of 1,662 adults conducted by the gallup organizatrion for the chicago council on foreign relations from october 23 to November 15, 1990 .

[5] A US national telephone servey of 1,000 adults conducted by market strategies for the americans talk issues foundation during december 1991.

[6] A US national telephone survey of 1,000 adults conducted by the fallup organization for cable news network and U.S.A today, march 29-31,1993.

[7] A US national telephone survey of 1,492 adults conducted by the gallup organization for the chicago council on foreign relations, october 7 - 25, 1994.

[8] The same composite index in the 1993 study was termed the " nuclear threat index ."

Increases in perceptions of risks associated with our own nculear assets are more difficult to understand. There have been no public reports of nuclear incidents or accidents since 1993, and the US stockpile is in the process of being substantially reduced. Dismantlement has apparently proceeded without incident, and there has been little if any public debate about nuclear surety. The continuing debate about long - term storage of nuclear materials, the return of spent nuclear reactor fuel form Europe to the US, and the removal of nuclear materials from kazakhstan for storage in the US has generated some public interest, but reasons why public perceptions of risks of nuclear weapons management appear to have increased remain elusive. [15]

Having found that public perceptions of external risks of nuclear weapons have not declined and that perceptions of domestic nuclear risks have increased significantly since 1993, is it also the case that perceived benefits of these weapons have declined ? We might reasonably anticipate that the collapse of the former Soviet Union may have reduced the perceived necessity for nuclear deterrence, and perhaps nuclear weapons are not seen as appropriate tools for dealing with post - cold war security challenges. In the next chapter we will answer that question by examining public perceptions of external and domestic benefits associated with nuclear weapons that may act to counterbalance perceived nuclear risks described above .

Section 2.5: Summarizing Perceptions of External and Domestic Nuclear Risks

Our expectations in 1993 were that we would find that public perceptions of external nuclear risks, measured as a function of change since the breakup of the Soviet Union, would reflect reduced concern. Our expectations about domestic nuclear risks were less clear, but we expected that after nearly a half - century of living with nuclear weapons, and after having survived the nuclear arms race with the Soviet Union, the US public would probably not consider their own nuclear arsenal to pose substantial risks to society .

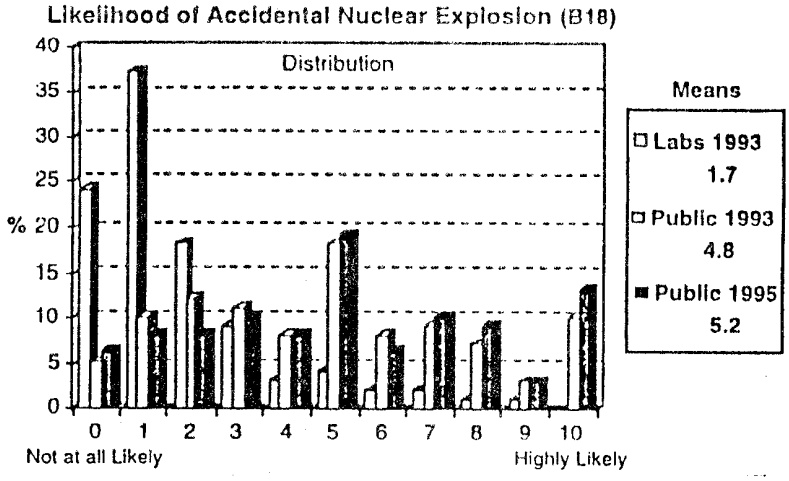
Instead, in 1993 we found a public that considered the risk of nuclear conflict occurring somewhere in the world, the risk nuclear proliferation, and the risk of nuclear terrorism all to have increased since trhe end of the cold war. And we found that even after decades of possessing nuclear weapons without catastrophic accidents or unauthorized use, our respondents still attributed substantial risks to the management and maintenance of a nuclear arsenal .

Our expectations in 1995 were that we would find a gradual lessening of concern about external nuclear risks as the public absorbed and became more accustomed to changes associated with the newly evolving security environment, and that we would find little if any change in perceptions of nuclear risks from managing our own nculear arsenal. Instead, our findings indicate that public concern about external nuclear security has remained high, and perceptions of domestic risks have increased in the period from 1993 to 1995 . The external risk concerns seem to be driven less by fear that the US will be attacked by another nuclear power than by perceptions that the chances for nuclear conflict among other states have increased since the breakup of the Soviet empire, and by growing concerns about nuclear proliferation and terrorism.

safety features, and system redundancy might consider the likelihood of an accidental explosion of a nuclear weapon to be " vanishingly small," but members of the public who are not as well informed about nuclear surety may not be so confident. When considering public perceptions of risk, it is useful to remember that perceptions can sometimes be more policy - relevant than facts. Figure 2.20 contrasts responses of members randomly selected from the technical staffs four national laboratories in 1993 with those of the general public in 1993 and 1995. All answers are in response to the following question: " How would you rate the likelihood of an accident involving a US nuclear weapons causing an unintended nuclear explosion?" Answers were provided on a scale where one meant not at all likely, and seven meant highly likely.

Figure 2.20 Likelihood of Accidental Nuclear Explosion (B18)

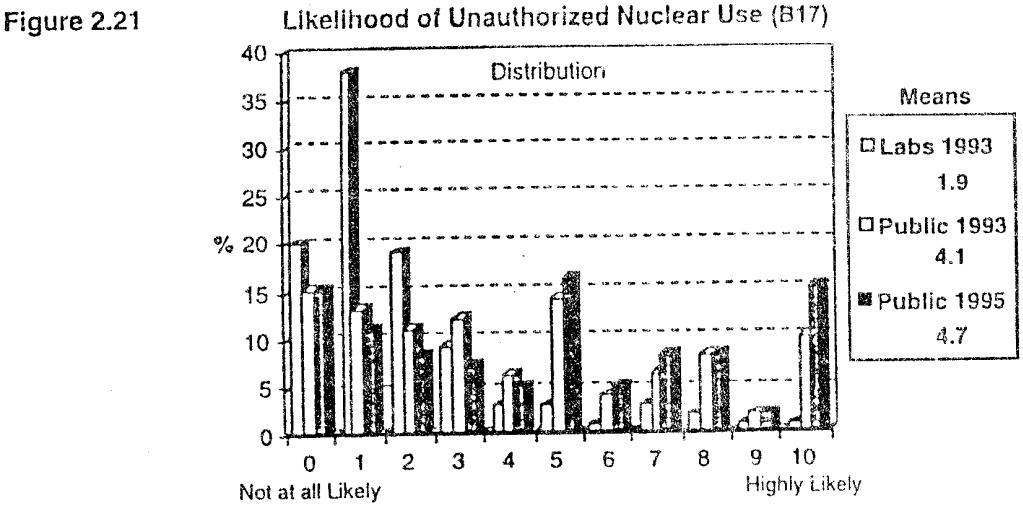
Figure 2.20



Obvious differences in the distributions between perspectives of members of the technical staffs of national laboratories and the general public illustrate how technical information and popular perceptions are often at odds. The differences in means are striking . There is also a statistically significant increase since 1993 in public perceptions of the likelihood of a nuclear accident (p=.0012).

Similar distinctions between public and technical perspectives are evident regarding the issue of unauthorized nuclear use. We asked survey participants in 1993 and 1995 to rate the likelihood of a US nuclear weapons being used within the next 25 years without presidential authorization . We compare answers given by members of the national labs with those from the public in Figure 2.21 .

Figure 2.21 Likelihood of Unsauthorized Nuclear Use (B17)



Again, the difference in perspectives between technically trained members of national laborastories and members of the general public are dramatic . Additionally, the increase in public assessment since 1993 is highly statistcally singificant (p<.0001), and it is consistent with other trends in risk perceptions we previously noted .

Construicting an landex of Domestic Nuclear Risk Perceptions

By combining responses to questions about risks associated with selected aspects of managing nuclear weapons and questions about risks of accidental or unauthorized use, we can construct a composite nuclear weapons domestic risk index. Our index combines responses to inquiries about trhe following seven issues :

Figure2.18Risks of Disassembling Nuclear weapons in the US (B6)

Figure 2.18

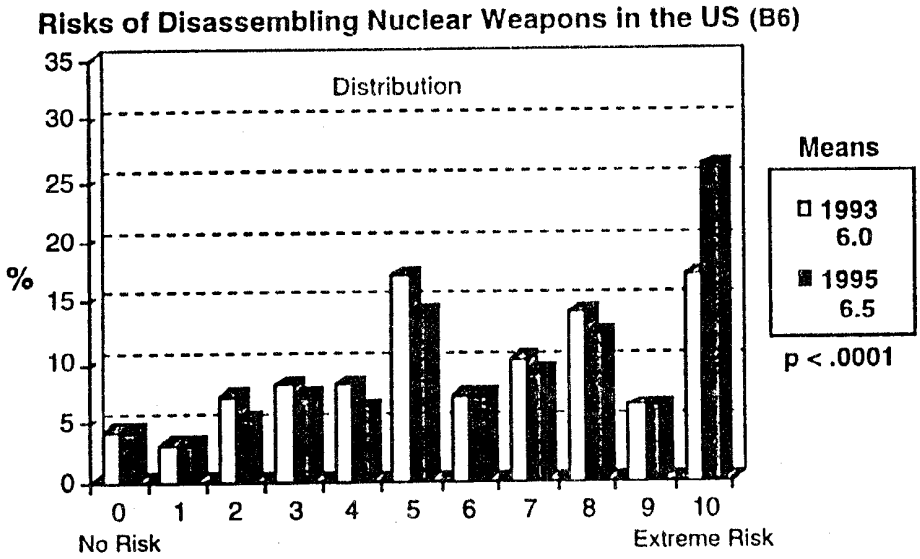
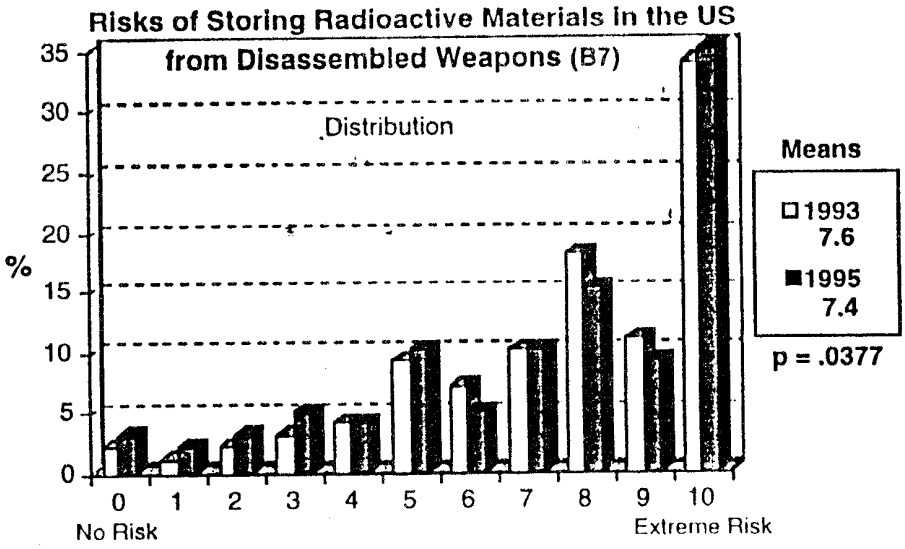


Figure2.19 Risks of stroring Radioactive Materials in the US from disassembled weapons (B7)

Figure 2.19



Three points seem to be important. First, the distributions of answers to the same questions in 1993 and 1995 exhibit quite similar patterns of rsponses.The modal response to each question in both surveys was ten, indicating that more participants perceived the management of nuclear weapons to pose extreme risks than any other level of risk from which they could choose. Second, mean perceptions of the risks associated with the different aspects of nuclear weapons management increased between 1993 and 1995 for all

management issues except storing radioactive materials from disassembled weapons, and all of the changes were statistically significant ($p < .05$) . Third, no serious nuclear incidents or accidents associated with US management of nuclear weapons were publicly reported during the period under study .

The implications for the nuclear establishment seem to be that the US public considers the activities associated with managing nuclear weapons and maintaining the strategic stockpile to pose substantial risks to society, and those risks are perceived to be increasing. That is not to imply that the public cosiders those risks to be unacceptable, as responses to policy questions in Chapter Four will show, but it may indicate that public tolerance of nuclear weapons could be significantly influenced by pereceived inreases in domestic nuclear risks,such as an incident or accident involving nuclear assets .

Risks of Accidental or Unauthorized Use of Nuclear Weapons

Other dimensions of potential risks associated with our own nuclear weapons relate to the possibility that a US nuclear device might be invoved in an unintended nuclear explosion or might be used without presidential authorization . Scientists who are knowledgeable about nuclear weapons design,

The second point to note is how very different response patterns can yield similar means. Note the bimodal nature of responses to the question about owning a firearm. Fully 25 percent of respondents attributed no risk to owning a firearm, while nearly as many participants considered gun ownership to pose extreme risk. Many other controversial issues or activities can yield risk perceptions that are diametrically op posed. When we examined the distribution of answers to the question about driving an automobile, we found a much more even distribution, with the modal response being precisely at mid - scale. Obviously driving an automobile does not produce the polarizing results that the gun ownership question did, yet the mean value of responses to both questions was within 0.3 points. Issues or activities about which respondents are assessing risks can produce similar mean values, yet have very different implications, based on the distribution of answers. Both points are worth remembering as we examine perceptions of domestic risks associated with US nuclear weapons.

Risks of Managing Nuclear Weapons

We asked a series of questions in 1993 and 1995 about the risks participants perceived to be associated with managing the US nuclear arsenal. Using the same scale used in the base line risk questions above, where zero meant no risk and ten meant extreme risk, we asked respondents to rate the risks to American society of manufacturing, transporting, storing, and disassembling nuclear weapons in the US and storing radioactive materials in the US from disassembled weapons. Figures 2.15 - 2.19 display responses to each question .

Figure2,15 Risks of Manufacturing Nuclear Weapons in the US(B3)

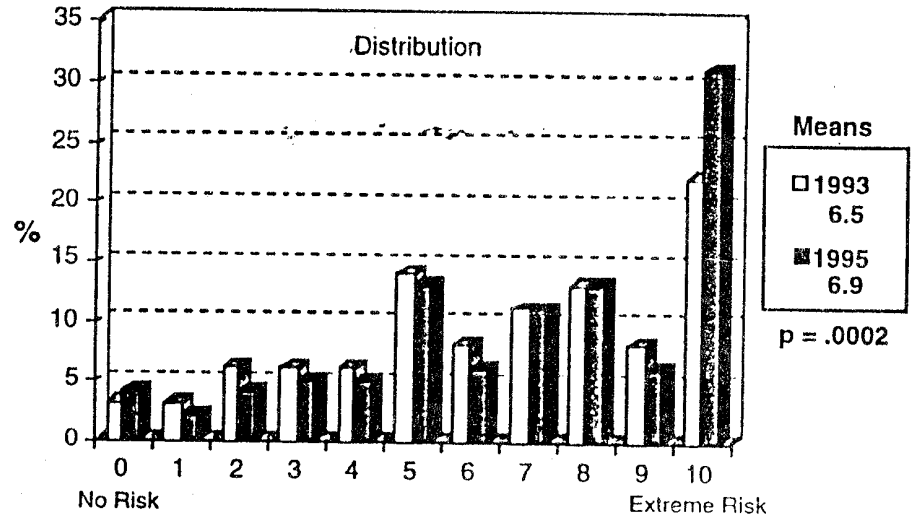


Figure2.16 Risks of Transporting nuclear weapons in the US (B4)

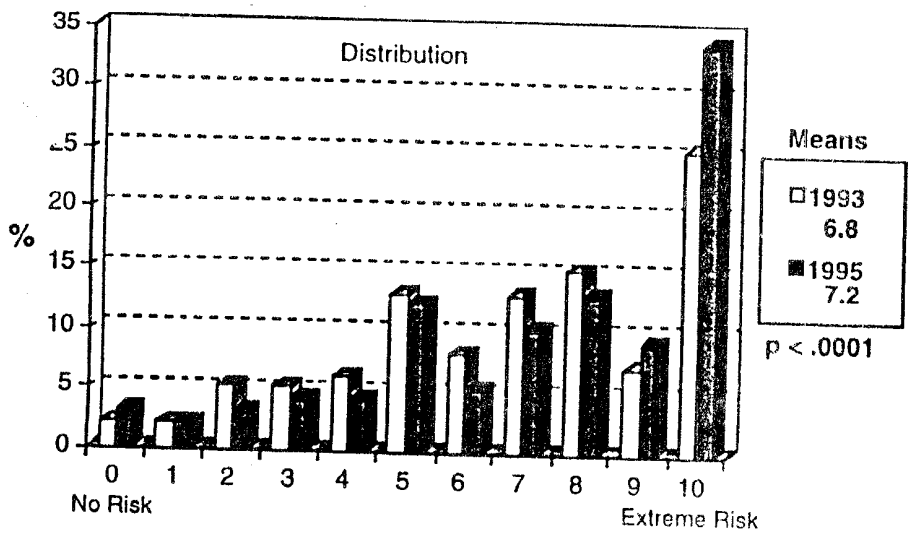
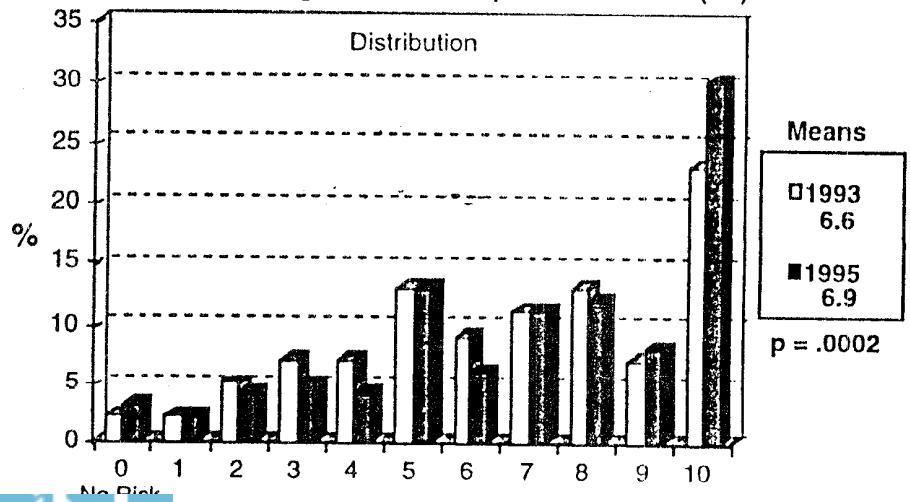
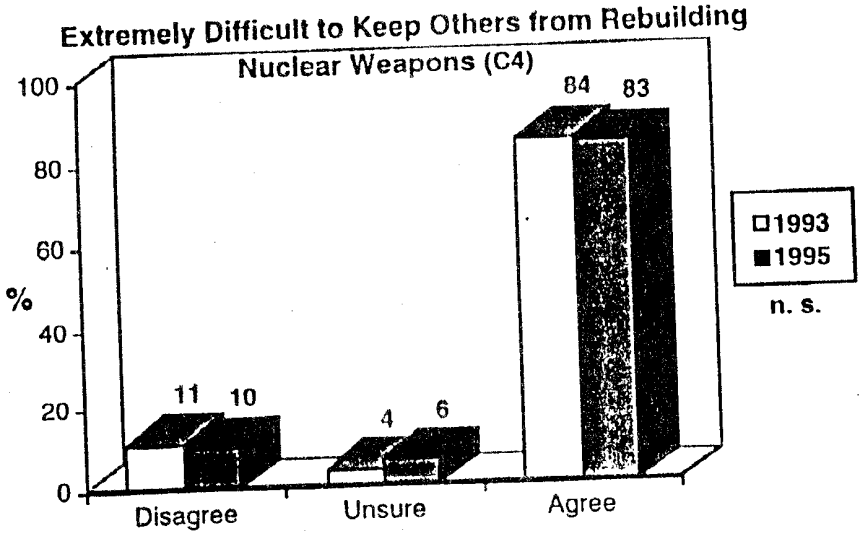


Figure 2.17 Risks of Storing Nuclear Weapons in the US (B5)



Further perspective about issue is provided by responses to a related inquiry in both 1993 and 1995 . Using the same scale, we asked participants to respond to the following statement :" Even if all the nuclear weapons could somehow be eliminated worldwide, it would be extremely difficult to keep other countries from building them again." Figure 2.13 compares responses from both surveys .

Figure 2.13



Note the consistency in views between our 1993 and 1995 surveys. When these findings are combined with those in Figure 2.11, it seems apparent that the public recognizes the difficulties in eliminating nuclear weapons, and is of the opinion that they are likely to be a persistent attribute of the post - cold war security environment.

Section 2.4: Perceptions of Domestic Risks of Nuclear Weapons

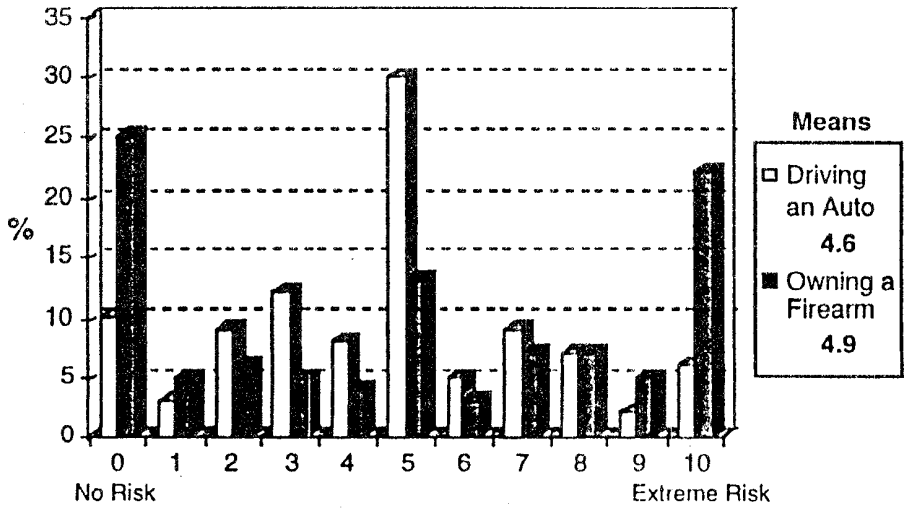
Base Line Risk Sensitivities

In order to provide A base line of respondent risk perceptions against which to gauge comparative domestic risks related to nuclear weapons and other security issues, we asked survey

participants to express their perceptions of the risks associated with two activities about which there has been much social discussion driving automobiles and owning firearms. Both are voluntary activities; both are within the personal experience of many Americans; and both are widely

perceived to have associated risks. Using a scale where zero meant no risk, and ten meant extreme risk, we asked resondents to rate the personal risks to them from driving an outomobile and owning a personal firearm. Figure 2.14 shows the distribution of their answers and mean responses to both questions .

Figure2.14 Base Line Risks : Driving an Auto;Owning a Firearm (b1- b2)

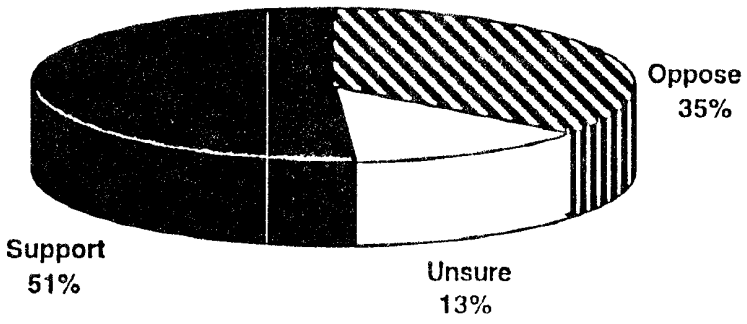


This normative measure inicates two interesting aspects of public risk perceptions. First, note that both are rated near mid - scale on average. This means that our respondents perceived substantial risks to be associated with both driving an automobile and owning a firearm, yet it is a virtual certainty that an overwhelming majority of participants drive motor vehicles and a significant numer of them probably own firearms. The fact that survey respondents recognize risks associated with a particular activity does not imply that they think the activity is not worhwhile or that the associated risks are not worth taking.

In 1995 we asked how respondents felt about the US agreeing to a treaty provision that requires us to eventually eliminate all of our nuclear weapons. Respondents answered using a scale where zero meant that they would strongly oppose such a provision, and ten meant they would strongly support it. No mention was mad of Article VI of the Treaty on the Non- Proliferation of Nuclear Weapons, to which the US is a signatory.[13] Figure 2.11 summarizes responses .

Figure 2.11 Provision Requiring US to Eventually Eliminate all its Nuclear Weapons(B39)

Figure 2.11

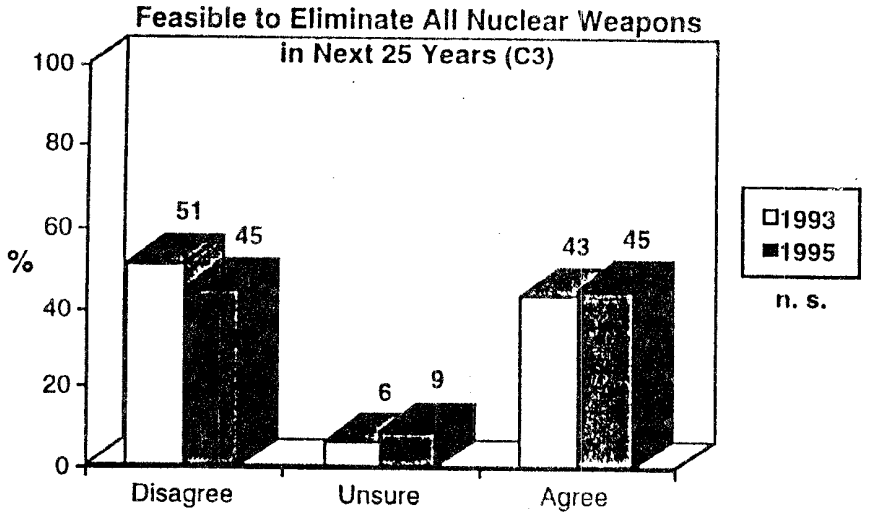


Results from all these surveys support the contention that Americans would prefer the worldwide elimination of all nuclear weapons if that was a viable option.

The Feasibility of Eliminating Nuclear Weapons

The same 1991 CBS News/New York Times poll (noted above), also asked the following question: " Do you think it is possible in the foreseable future to eliminate all nuclear weapons, or is that not a realistic possibility?" Results provide a useful benchmark of public attitudes about the possibility of eliminating nuclear weapons that coincides with the breakup of the Soviet Union. At that time, fully 70 percent of respondents considered the elimination of all nuclear weapons not to be a realistic possibility; 25 percent thought such an eventuality was possible; and five percent did not know or chose not to answer. [14]

A second benchmark is provided by our 1993 survey which asked participants to respond to the following statement on a scale where one meant stronlgy disagree, and seven meant agree: " It is feasible to eliminate all nuclear weapons worldwide within the next 25 years." A third refernce was provided when that format was repeated in 1995. We show the grouped distributions of responses from both surveys in figure 2.12



Note the split in public opinion; in both our surveys, about half of the respondents considered the eventual elimination of nuclear weapons to be feasible, while about half considered their elimination not to be feasible. Some differences in responses between the CBS News/New York Times poll and our surveys should be expected because of differences in question structure . Nevertheless, movement from 70 percent in 1991, indicating that the elimination of nuclear weapons was not feasible in the foreseeable future, to a roughly even distribution in 1993 and 1995 may mean that public optimism about the elimination of nuclear weapons shifted substantially following the breakup of the Soviet Union in 1991. The differences in public views between 1993 and 1995 indicate that change may be continuing to occur, though more gradually .

contrary to expectations of a gradual post - cold war decrease in perceptions of extetnal nuclear risks, public views of the threat posed by others' nuclear weapons, have remaindh high .

Section 2.3 Persistence of Nuclear weapons

In addition to the nature and degree of perceived nuclear threats, another aspect of public perceptions in this area relates to expectations about threat persistence. Do members of the Public think nuclear weapons are a permanent attribute of the international system? Has the end of the cold war changed the likihood that such weapons eventually can be eliminated ?

Evidence indicates that questions about eliminating nuclear weapons have two related but separate dimensions. One has to do with the desirability of eliminating nuclear weapons. Questions that investigate this dimension are inquiring about ideological or philosophical preferences. The other dimension relates to the feasibility of eliminating nuclear weapons. Questions that investigate this dimension are inquiring about the perceived practicality of a particular policy outcome. Analysts should carefully distinguish the differences involved in comparing public responses about different dimensions of the same issue .

The Desirability of Eliminating Nuclear Weapons

Several polls conducted by other research organizations provide evidence that when asked about the desirability of eliminating nuclear weapons worldwide, a majority of respondents will favor that objective. The following results from several national surveys illustratre the point :

* In 1988 and Market Opinion Research asked:
" ..as a general goal, which of these two do you think is more disirable ?"

	1988 [9]	1991 [10]
- The elimination of all nuclear arms in the world"	53%	60%
- "For a few major countries including the US to have enough nuclear arms so no country would dare attack them"	43%	38%
- Did not know or refused to answer	3%	2%

* In 1990 Market strategies asked :

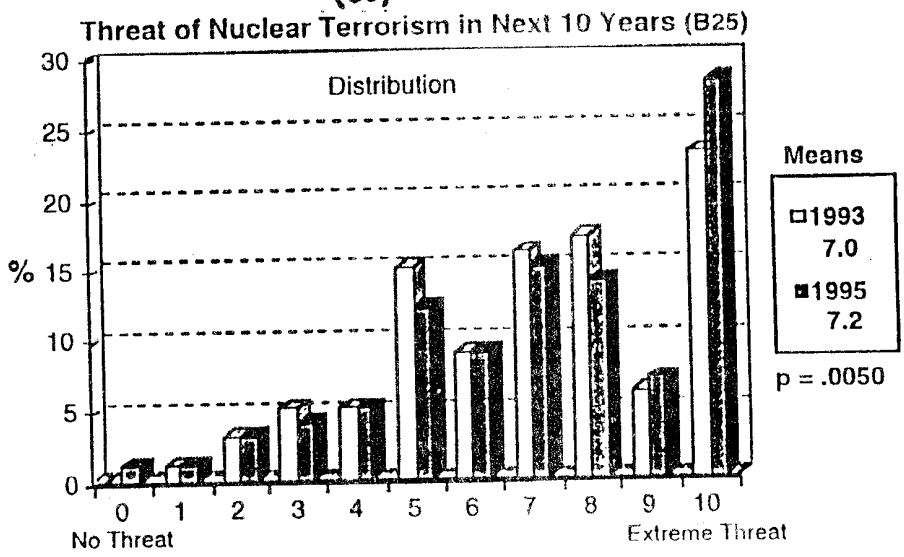
".. Do you approve of a treaty that would lead to the elimination of all nuclear weapons ?"[11]

- strongly approve 69%
- somewhat approve 13%
- somewhat disapprove 8%
- strongly disapprove 7%
- Don't know 2%

* A 1991 CBS News/New York Times Poll asked :
" Suppose the United States and the Soviet Union could agree to eliminate all nuclear weapons -- and get other nations that have them to do the same. Would you approve or disapprove of the elimination of all nuclear weapons?" [12]

- Approve 87%
- Disapprove 11%
- Don't know/no answer 2 %

Figure 2.9



The wording of each question about the threat of nuclear terrorism required our respondents to consider both the likelihood and the potential consequences of such acts, and their answeres mirror both the pessimism and concern that we found in focus group in focus group discuissions. Our findings indicate that the US public takes the threat of nuclear terrorism very seriously .

Constructing an Index of External Nuclear Risk Perceptions

By combining perceptions of multiple risk dimensions, we can construct a composite index of respondent perceptions about external nuclear risks. the index combines results from inquiries into the following issues :

* The threat of the US becoming involved in nuclear conflict (B19) .

* The threat of nuclear war occurring between any two or more states in the international system (B20).

* The threat of the spread of nuclear weapons(B22).

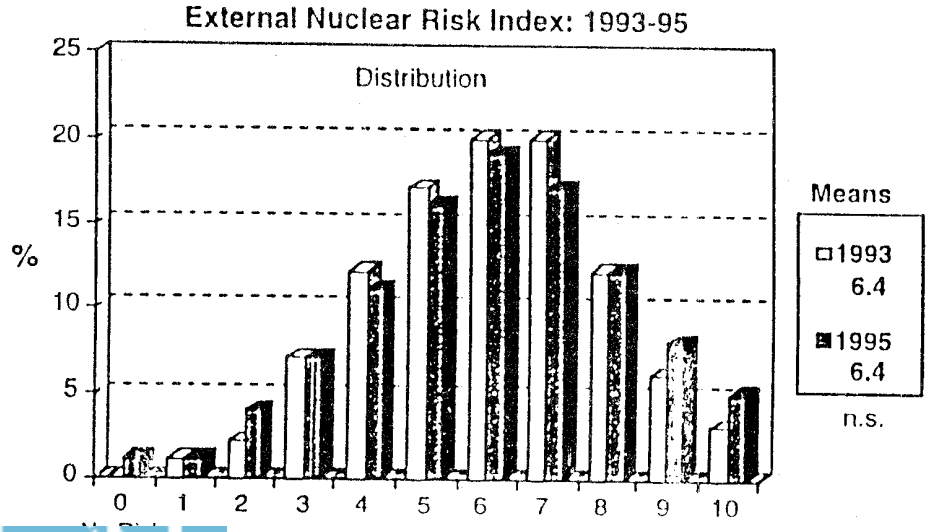
* The implications for the US of further nuclear proliferation (B23) .

* The current threat of nuclear terrorism (B24) .

* The threat of nuclear terrorism in the next ten years (B25).

In Figure 2.10 we provide a comparision of combined responses to the same questions in 1993 and 1995 .

Figure 2.10

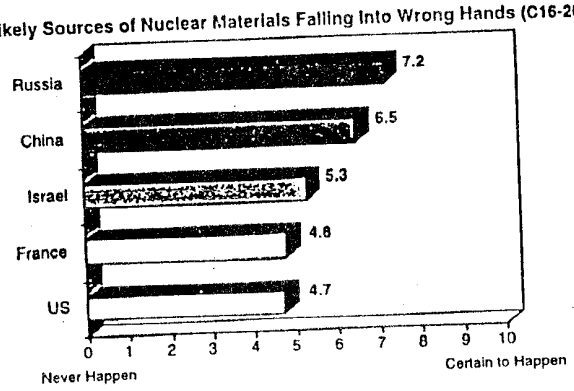


The similarity not only of the means, but also of the response patterns, in combination with results from the surveys by other organizations in table2.1,indicates both high levels of risk perceptions and a high degree of stability in the concerns with which Americans view the potential of further nuclear proliferation .

Nuclear Terrorism

Another aspect of nuclear risk posed by the possibility of nuclear terrorism. Such forms of terrorism might not only involve acts that yield nuclear explosions, but they could also involve the dispersion of radioactive materials by conventional explosives, or the use of nuclear materials for coercion. To help gauge the degree to which participants discriminated between more and less likely sources of nuclear materials that might transferred to potential proliferants or terrorists, we asked a subset of 844 respondents in 1995 to rate their perceptions of the likelihood of nuclear materials from a variety of different countries being smuggled into the " wrong hands." Responses were provided on a scale where zero meant such a transfer would never happen and ten meant it was certain to happen. Figure 2.7 compares results.

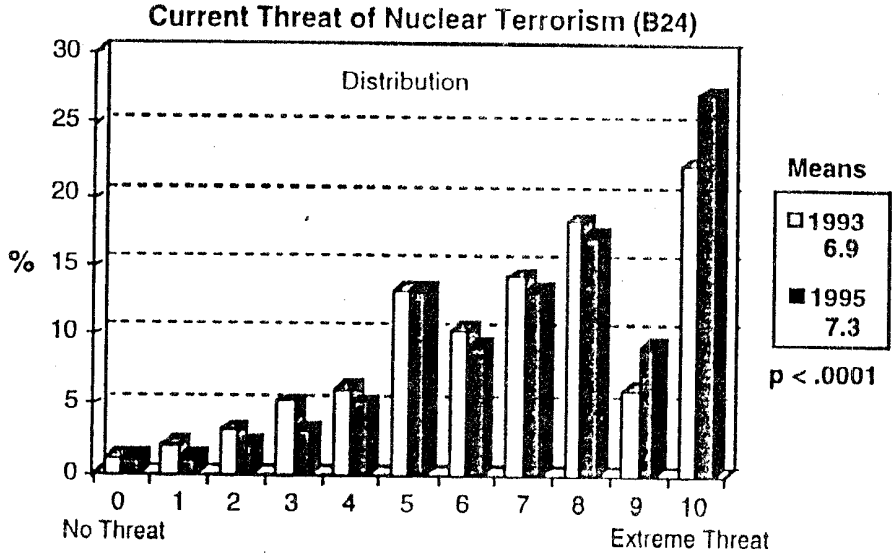
Figure 2.7 Likely Sources of Nuclear Materials Falling Into Wrong Hands (C16-20)



Rusults indicate discrimination among potential proliferation sources ranging from a low of 4.7for the US to a high of 7.2 for Russia.They also inicate substantial levels of overall concern about the security of nuclear materials,even within our own country,which respondents rated just below mid - scale .

Turning to the overall risk of nuclear terrorism, Figure 2.8 shows a notable increase in perceived threat of nuclear terrorism between 1993 and 1995. On a scale where zero meant no threat, and ten meant extreme threat, more than one-fourth of respondents in 1995 considered nuclear terrorism to pose an extreme threat, and the mean value of concern increased from 6.9 in 1993 to 7.3 in 1995.That increase is highly statistically significant ($p<.0001$), and it reflects what appears to be growing concern about the potential for nuclear weapons copabilities to be acquired by terrorist groups.

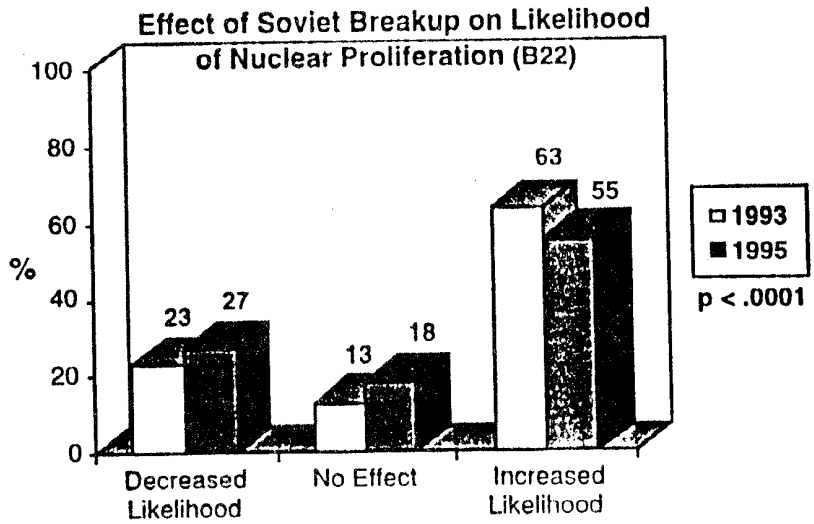
Figure 2.8



Perceotuions of the risk of nuclear terrorism in the next ten years reflect similar levels of concern. Again participants did not appear to see a lessening of threat from nuclear terrorism. Instead, they reflected perceptions of growing risk, as shown in Fiugure 2.9 .

nuclear proliferation (55 percent thought the likelihood of proliferation has increased), that concern seemed to have lessened somewhat, with the percentage of those perceiving an increased likelihood dropping from 63 percent in 1993 to 55 percent in 1995. This seems consistent with the fact that although there have been reports of attempts at nuclear smuggling from the former Soviet republics, no instances of nuclear proliferation have yet been shown to derive from such actions.

Figure 2.5



Considerable evidence exists as to the concern with the American public views the prospect of further nuclear proliferation. A series of polls between 1990 and 1994 asked similar questions about the importance to US security of preventing the spread of nuclear weapons. Respondents were read a list of possible foreign policy goals for the US and asked to rate each as to its importance or priority. one of those goals was to prevent the spread of nuclear weapons. Grouped responses to that question are shown in table 2.1.

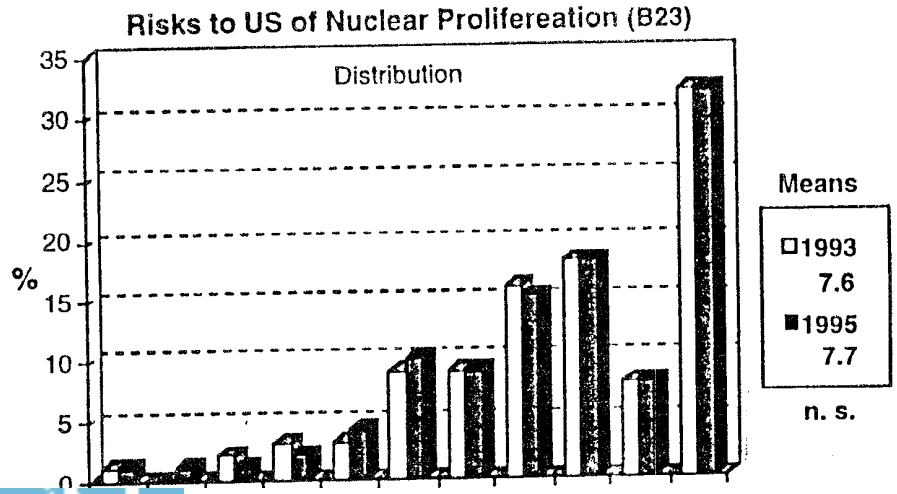
Table 2.1 Preventing Nuclear Proliferation as a Goal of US Foreign Policy

Date	Org.	Response Categories (%)			
November 1990 [4]	Gallup	Very Important	Somewhat Important	Not at all Important	Don't Know
		59	32	5	4
December 1991 [5]	Market Strategies	Extremely Important	Very Important	Somewhat Important	Not Very Important
		56	35	7	2
March 1993 [6]	Gallup	Top Priority	Among Most Important	Important, But Not a Priority	Don't Know / Refused
		42	33	22	0
October 1994 [7]	Gallup	Very Important	Somewhat Important	Not Important	Not Sure
		82	14	2	2

In these four surveys, conducted over a period of four years, the percentage of respondents who thought that preventing nuclear proliferation should be in important goal of US foreign policy ranged from 75 to 96 percent .

When we asked the implications of nuclear proliferation in our 1993 and 1995 surveys, respondents indicated similar levels of concern . Using a scale where one meant no risk and ten meant extreme risk, we asked participants to assess the US if more countries have nuclear weapons. In Figure 2.6 we compare the distributions and mean responses to the same question asked in 1993 and 1995 .

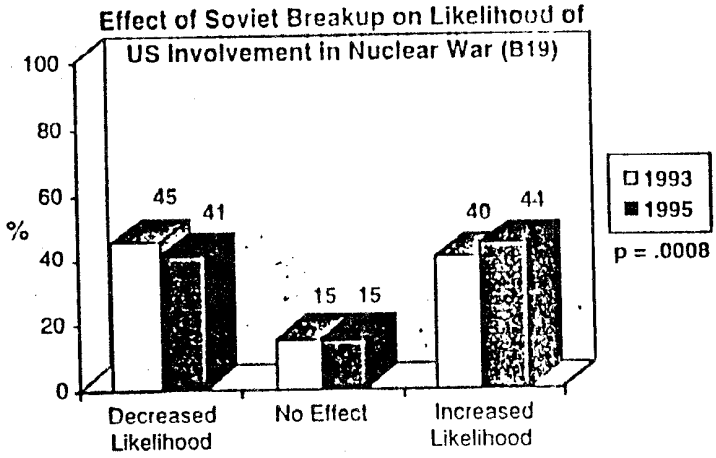
Figure 2.6



Nuclear Conflict

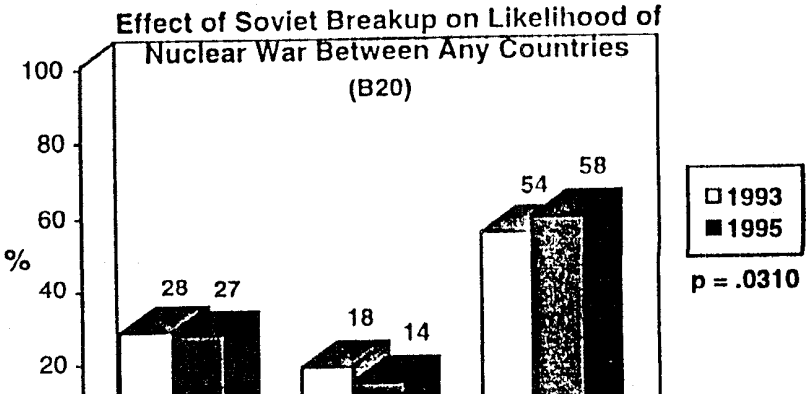
First, we asked respondents how they thought the breakup of the Soviet Union affected the chances that the US might become involved in a war with any country in which nuclear weapons are used. Fugure 2.2 compares aggergated responses among the public in 1993 and 1995. Note that public perceptions of the likelihood of the US becoming involved in nuclear war have increased since 1993, but they still reflect a relatively equal division of opinion. The more salient point is that despite the generally optimistic view about current and future US and Russian releations, risk perceptions have not decreased (contrary to our expectations) thus far into the post - cold war era .

Figure 2.2



Next, we asked how the demise of the Soviet Union affected the chances that nuclear weapons might be used by any country against any other country. Figure2.3 compares responses in 1993 with those in 1995. In both surveys, a majority of respondents judged the likelihood of nuclear confict to be higher than before the Soviet collapse .

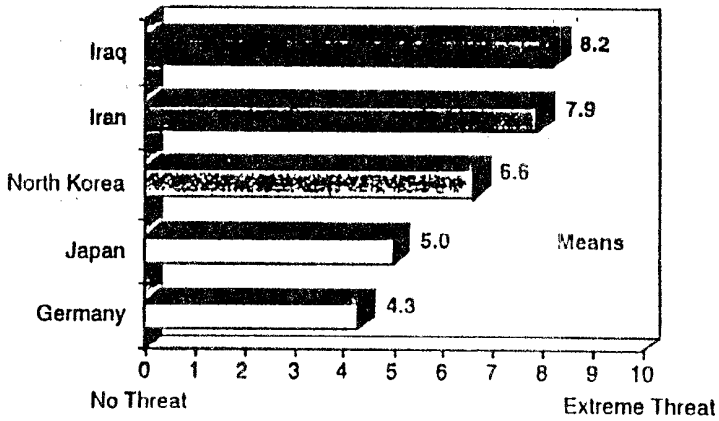
Figure 2.3



This is contrary to our expectations of a gradual decline in public perceptions of the danger of nuclear conflict in the post-cold war period.

To gauge how participants differentiated degrees of threat associated with the potential for specific states to have nuclear weapons, we read a list of countries to a subset of 844 respondents, and using a scale where zero meant no threat and 10 meant extreme threat, we asked them to rate how much threat each of the five countries would pose if they had nuclear weapons. Figure 2.4 compares mean risk perceptions.

Figure 2.4 **Threat Posed if States Had Nuclear Weapons (C6-C10)**



While perceptions of threat from a potentially nuclear North korea, Iran, and Iraq were expected to be high, respondents also rated two US allies near mid-scale, indicating that they perceived substantial potential threat to be associated with the acquisition of nuclear weapons, even among current allies Japan and Germany.

Nuclear Proliferation

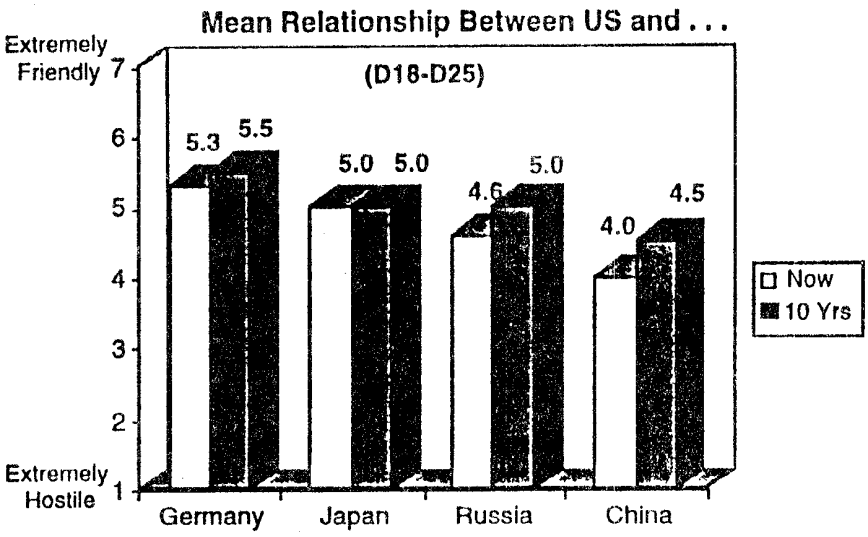
Turning to the influence of the Soviet breakup on the likelihood of further nuclear proliferation, we asked respondents how they thought the threat of nuclear weapons spreading to other counbtries has changed since the Soviet devolution. As Figure 2.5 shows, although opinion remained high that the disintegration of the Soviet Union may contribute to further

is becoming increasingly complex. Most thought that these hreats were more confusing and worrisome than the threats of the the latter years of the cold war. There were a few optimistic assessments about the county's security, but most focus group perceptions of security ranged from doubtful to deeply concerned .

Section 2.2 : Measuring Evolving Percptions of External Nuclear Risks

To Help Define the international context in which perceptions of post - cold war risks from others' nuclear weapons can be interpreted, we asked two questions about relative perceptions of US relations with four important states. Two of them, Russia and China, are states that can threaten US security with nuclear weapons. The other two, Germany and Japan, do not now have nuclear weapons, but are major economic competitors with the US, and both are widely recognized as having the capability to develop nuclear weapons if they should choose to do so . In our first question, we asked respondents to rate the current relationship between the US and each of the other states using a scale where one meant extremely hostile, and seven meant extremely friendly. Using the same scale, our second question asked them how they thought the relationship between the US and each of other states would be ten years from now. Figure 2.1 compares mean responses to both inquiries.

Figure 2.1



Three points are notable. First, respondents rated current and future relations between the US and each of the four other states at mid -scale or higher. Second, respondents rated future prospects higher than current relations for all of the states but Japan . And third, Russia was rated higher than China, and US relations with Russia were forecast to be on a par with US/ Japanese relations in ten years. This picture implies that participants were generally positive about current and future relations with the State that was the principle US antagonist throughout most of the cold war years.

To pursue the implications of these perspectives about the post - cold war security environment, we employed the method used in our 1993 survey to measure perceptions of external nuclear risks along three dimensions: the likelihood of nuclear war, nuclear proliferation, and nuclear terrorism.[3]

Focus Group Indications

In 1993 we conducted three guided focus group discussions, and we held another eight focus groups in 1995.[2] These discussions provided informal but valuable insight into evolving attitudes about security issues. Most particpants expressed the view that the international environment had changed importantly since the end of the cold war, though there were different interpretations of the implications for US national security. Many participants perceived a reduced strategic nuclear threat, and that view seemed to grow between 1993 and 1995 , but others remained uneasy about the prospects for conflict and war in various regions around the world . Some participants did not perceive post - cold war US military interventions to be necessary for US national security, and they complained that US relationships with other countries have changed so drastically and so rapidly that they are no longer understanable .

Focus group members from lower socioeconmic status (SES) groups were generally more worried about domestic economic conditions and social violence than they were about military threats from other countries, but they were concerned that the US has become the world's policeman, intervening in civil and regional conflicts that do not threaten US national interests. Focus group members from higher SES groups held more balanced concerns between domestic and foreign issues, but some members from these groups also expressed confusion and lack of understanding of US involvement in Somalia, Haiti, and Bosnia .

Most participants in the 1995 focus groups thought that the current threat of a nuclear attack against the US was lower than it was in the cold war years, but most also were more fearful of nuclear weapons and nuclear materials falling into the wrong hands . nuclear proliferation and the potential for nuclear terrorism were broadly perceived to be important

threats to US security and international stability. The possibility that terrorist attacks like those against the World Trade Center in New York and the federal building in Oklahoma City might involve nuclear material was raised by more than one group . Participants were aware of apparent increases in international attempts to smuggle nuclear materials, and they were concerned by the possibility that Russian nuclear weapons or materials might be sold on the international balck market .

Focus groups evidenced little concern about the safety and security of US nuclear assets or the possibility that they might be used without authorization. A majority of participants in all the groups was generally confident about the safety, security, and control of US nuclear weapons and nuclear materials, though some noted that the US is not immune to potential nuclear smuggling. However, a larger majority of discussants was concerned that Russian nuclear assets might be illegally transferred to rogue states or nuclear terrorists. Focus groups were aslo asked whether they thought North Korea, and Iran, and Iraq were actively seeking nuclear weapons capabilities, and most thought those countries were indeed attempting to acquire nuclear weapons. weapons. A potentially nuclear Iran was considered particularly threatening .

When asked whether the US is more or less secure then it was five years ago, most discussants in both 1993 and 1995 agreed that the country is less secure, though their rationales varied considerably. Some cited worries about nuclear proliferation and terrorism; others were concerned about US willingness to intervene in foreign conflicts. Many identified crime and social violence as a key threat to personal security, and some considered societal violence to be a threat to US national security . At all socioeconomic levels, there appeared to be overlap between perceptions of internal and external threats to national security.participants perceived that American society is challenged by a wide range of threats that

Chapter Two

Evolving Perceptions of Nuclear Weapons Risks

Section 2.1:Perceptions of the Post-Cold War Security Environment

The profound changes in Europe that accompanied the liberalization of Eastern Europe, the reunification of Germany, and the dissolution of the Soviet Union are still being assimilated and evaluated by the American public. They are being weighed within the context of aggression by iraq in the Persian Gulf, enduring ethnic enmities in the Balkan States, and fears of " loose nukes" in Russia and other former Soviet States At home, the US public has witnessed instances of large-scale domestic terrorism,and even though some national crime statistics show a decline in certain types of Crime, many Americans believe that their Society is becoming More rather than less threatening . [1]

The US political process is also sending complex messages. while the US nuclear is being significantly reduced and restructured, and the US government has halted the development and testing of nuclear weapons, US forces have been sent to fight a war in the Persian Gulf, relieve starvation in Somalia,participate in nation- building in Haiti, and to enforce a fragile peace treaty in the former Yugoslavia. Elsowhere,as the US tries to negotiate an international ban on

testing nuclear weapons and the production of fissile materials for making nuclear devices, a few rogue states seem intent on gaining nuclear weapons capabilities. Attempts to smuggle nuclear materials and components that might be used to build nuclear weapons appear to be higher than during most of the cold war period .

How does the public evaluate these contradictory indications? How are these and other develoments influencing the rationale for nuclear weapons that most Americans understood during the East - West competition? Do Americans perceive the post - cold world to be more or less threatening than the nuclear standoff of its preceding decades?

Understanding how US public perceptions of post - cold war security are evolving is essential for policy choices about denuclearization, nuclear stockpile and infrastructure maintenance, and national strategy for the 21st century. If the first few years after the end of the cold war are indicative of the future, the process by which post - cold war security evolves is likely to be a confusing sequence of sometimes contradictory development, and the evolution of US public opinions about what these changes mean for national and international security is also likely to be complex and variable .

To understand how public perceptions and attitudes about security evolve, we need to identify measures and relationships that are sufficiently robust and enduring to provide comparative insight about change One of the most important dynamics to understand is how public perceotions of security evolve. The degree that public perceptions reflect expert analysis of the empirical nature of post - cold war security may not be as important to the policy process as understanding the perceptions themselves, for it is public perceptions of security that will influence public support or opposition to a wide variety of security policy options and investment strategies .

present new data about public perceptions of the value of nuclear deterrence during the cold war, in the current period, and the degree to which the public has confidence that nuclear deterrence will hold if more countries gain nuclear weapons in the future.

Chapter Four, " Policy and Spending Implications," examines public preferences about nuclear weapons research, arms control, and combating nuclear poroliferation and terrorism. We also examine spending preferences related to investments in nuclear weapons infrastructure, and investment strategies for preventing the spread of nuclear weapons and reducing the risks of nuclear terrorism. Additionally, we examine public attitudes about nuclear security in Russia, US/Russian scientisto secientist cooperation, and perceptions of current and future relations with key foreign states.

In Chapter Five, " Measuring Demographics," we examine demgraphic characteristics such as age, gender, education, income, military experience, and geographic location and how they are related to individual views. We relate demographic attributes to public perceptions of risks and benefits associated with nuclear capabilities, and we relate them to individual policy and spending prefernces .

Chapter Six , " Measuring Belief Systems , " analyzes how political orientation (ideology) and political culture (world view) are related to perceptions of nuclear weapons risks and benefits. we also exiamine the ways in which these belief systems interact with risk and benefit perceptions to affect nuclear security policy preferences .

Finally, in Chapter Seven," Personal Security and Technology," we examine public perceptions of vulnerability to crime and the potential for technologies to fight crime. we also report public preferences regarding investment strategies for national

laboratories and private industry to reduce crime, and related questions of potential liability for technologies that fail to prevent crime as intended . Additionally, we inquire about the applicability of principles of nuclear surety for reducing the risks of other technologies whose failures have high negative consequences for the public .

END Notes

[1] Hank C.Jenkins -Smith, Richard P. Barke, and kerry G.Herron, 1994, Public Perspectives of Nuclear Weapons in the Post - Cold War Environment: Findings and Analysis of the National Security Survey: perceptions and policy concerns 1993 - 1994, document ID:SAND 94 - 1265, Albuquerque, NM: Sandia National Laboratories .

[2] Daniel Yankelovich,1991,Coming to public judgmenbt : Making Democracy Work in a Complex World, Syracuse, NY: yracuse University press .

[3] " United States Department of Commerce News," Public Information Office 301-763-4040, Ecnomic and Statistics Adminstration, Bureau of the Census,United States Department of Commerce, Washington , Dc, june 11, 1991 .

[4] No persons below the age of 18 were allowed to participate in our survey, therefore the percentage of the survey population between 25 and 54 years of age is higher than the percentage of the US population between those ages .

[5] Digest of Educatiional Statistics:1994(NCES94-115), National Center for Education Statistics,U.S. Department of Education . These data represent percent of total population 18 years of age and over. They are based on a sample , and are subject to sampling variability.

[6] Census data about household incomes are based on a sample, and they are subject to sampling variability .

Data Collection

We conducted the survey at the university of New mexico's Institute for Public Policy, using its computer Assisted Telephone Inteviewing System. We employed stringent quality control measures throughout the data collection process. The overall cooperation rate was 55.7 percent.

The sample size and random selection procedures provide plus or minus one percent sampling error for base line questions and plus or minus four percent error for supplemental questions asked of the three separtate subgroups.

Date Analysis

We used the following four types of analysis :

* Descriptive analysis, to include frequency distributions and means, for all questions in this survey and for those questions from the 1993 survey that were used for comparisons over time .

* Relational analysis employing stanard statitical techniques such as analysis of variance, correlations, and ordinary least squares regressions to show relationships between individual variables and combinations of variables (indices) we placed special emphasis on the relationship of key indices to policy and spending options .

* Spatial analysis of selected variables to show geographical relationships,and in some cases to portray nongeographical spatial relationships between major indices and specific policy options .

* Over time analysis to show evolutionary changes in public perceotions and attitudes between 1993 and 1995 .

Sections 1.5: Organization

In Chapter two, " Evolving Perceptions of Nuclear Weapons Risks," we examine questions about public perceptions of nuclear conflict, nuclear proliferation, and nuclear terrorism, and construct a composite index of external risk (threat) perceptions . We also examine perceptions of risks associated with managing and controlling our own nuclear weapons, and construct a nuclear weapons domestic risk index. To show how risk perceptions are changing, we compare responses to the questions used in both indices, and the indices themselves, with responses to the same questions and indices we measured in 1993 . We also examine public perceptions of the persistence of nuclear weapons in the international system .

In Chapter Three, " Evolving Perceptions of the Benefits of US Nuclear Weapons," we analyze results of questrions about public perceotions of the external benefits and utilities of US nuclear weapons for achieving national security objectives, and perceptions of domestic benefits that may be associated with US nuclear assets. We combine related questions into a nuclear weapons external benefits index and a domestic benefits index. We then compare the component questions and indices with those measured in 1993 . we also

Figure 1.2 shows the geographical distribution of participants, and figure compares regional representation to regional populations.

Figure 1.2 **Geographic Distribution of Survey Respondents**

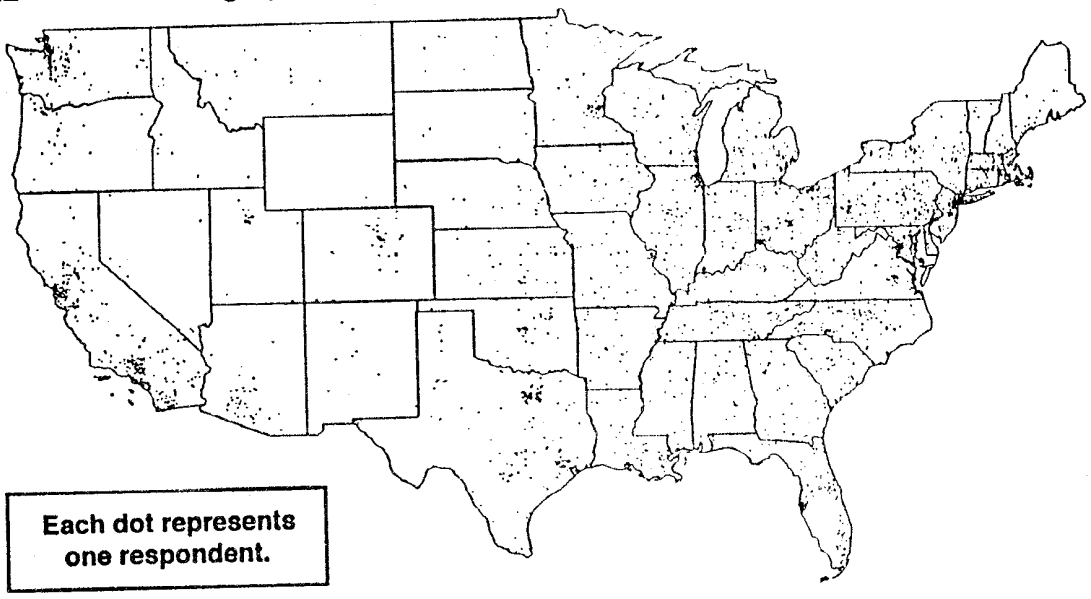
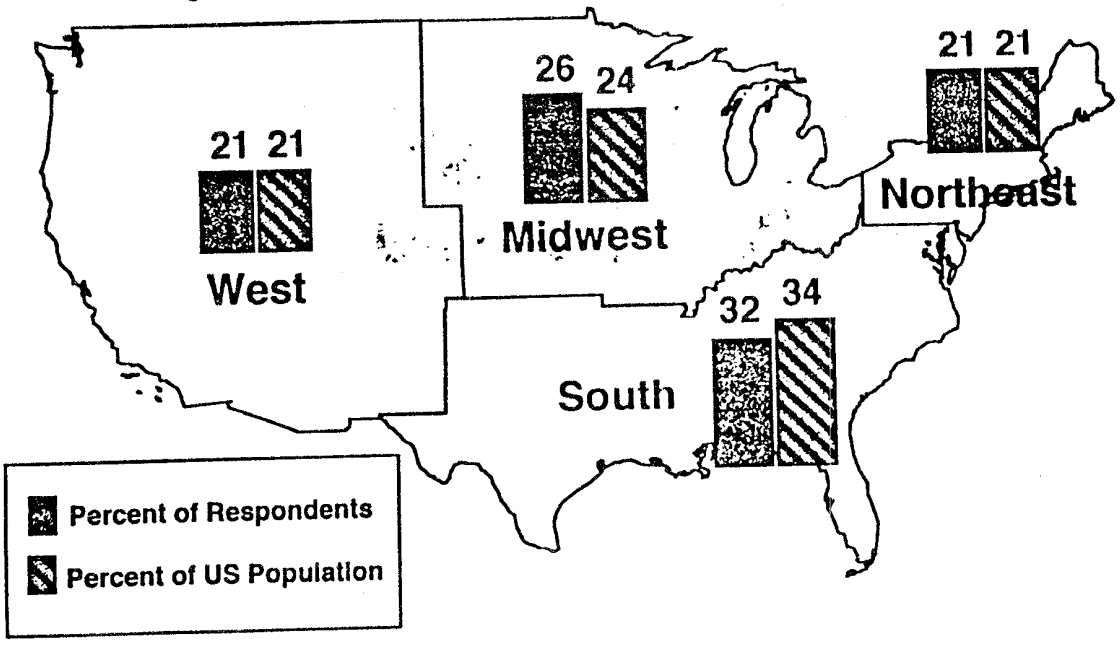


Figure 1.3 **Regional Distribution of Respondents vs. US Population**



Survey Instruments

our base line instrument of 736 questions was used in the nation - wide telephone survey of 2,490 respondents randomly selected from separate US households and interviewed between September 30 and November 14,1995. We supplemented the base line survey with three sets of additional inquiries :

* We asked 844 randomly chosen participants 39 additional questions pertaining to nuclear proliferation and terrorism .

* We asked a different randomly selected group of 834 respondents33 additional questions pertaining to US / Russian scientific cooperation .

* We asked the remaining 812 participants 29 additional questions pertaining to individual security and technology .

Each participant who completed the survey was asked all base line questions and set of supplemental questions; no participants were asked questions from more than one of the three sets of supplemental qurstions .

We included Key questions from our 1993 research in this survey for purposes of over time analysis : In some cases we made minor wording changes to streamline and simplify questions. To insure comparability of questions used for the over time analysis, we asked identically worded questions from our 1993 survey to 1,249 ranomly selected respondents, and we asked 1,241 randomly chosen participants to answer questions from the 1993 survey that had been streamlined. We then analyzed variations in mean responses to both forms of each question, and found only seven cases where differences in means were statistically significant. For those questions, we have included only the respondents receiving originally worded versions in the comparative analysis.

(SES)indices,and we chose membersof the other group at each location to meet higher SES requirements. Participants in the lower SES groups did not have an educational degree beyond high school, and each had an annual household income of $25,000 or less. Each participant in the higher SES groups held a Bachelor's degree or higher, and had a household income of $40,000 or more per year . Participants in all groups were between 25 and 65 years of age, and were recruited from the general public at each locale. Approximately equal numbers of male and female participants were selected,and attempts were made to achieve minority representations approximating local population distributions. we describe participants and summarize our observations about their views in Apendix 2.

Sampling

A sample frame of 13,000 randomly selected and ordered households having one or more telephones obtained from survey sampling, Incorporated, of Fairfield, Connecticut. Each household had an equal chance of being called .

Table1.1compares key demographics of survey participants to1990 US census parameters to illustrate the representative - ness of survey respondents compared to the US population as a whole .

Table1.1 Demographics of Respondents vs Demographic of US Population

Table 1.1 Demographics of Respondents vs. Demographics of US Population

Demographic Category	US Census 1990 (%) [3]	National Security Survey 1995 (%)
Gender		
Males	49	46
Females	51	54
Age		
18–24	11	13
25–54	43	64 [4]
> 54	21	22
Education [5]		
H.S. Graduate or Higher	80	94
College Grad. or Higher	20	35
Race / Ethnicity		
White, non Hispanic	80	79
Black	12	7
Hispanic	9	4
American Indian	1	2
Asian	3	2
Other	N/A	6
Household Income [6]		
$0–50,000	65	69
> $50,000	35	32

Subgroup 3: Personal Security and Technology

In addition to questions about national and international security, we asked the participants in a third subgroup of 812 respondents a series of questions about personal domestic security and its relationship to technology. Some questions investigated respondent perceptions of crime in the US and priorities for reducing it, while others inquired about public attitudes concerning the role of technology in fighting crime. We asked respondents about preferred relationships between government and industry for developing technologies to enhance personal security, and about how they apportioned responsibility when security technologies failed in specific scenarios. Finally, we asked them about applying principles of surety (safety, security, and control) developed by the US nuclear establishment to nonnuclear technologies and processes whose failures pose extreme risks to public safety.

Section 1.4: Methodology

THe opinion survey research methods we used in this study differ substantially from methods employed in many media surveys. Media polling generally seeks to measure immediate levels of public support for a specific policy option or a specific political personality. Such polls must be highly responsive to changing political conditions, because they are most often used to provide barometric indications of public mood. The need for timeliness, newsworthy results, and relatively simple explanation means that findings from media polls often are more impressionistic and ephemeral than that needed for systematic study of underlying relationships .

The rigorous academic opinion survey research methods we employed are used in many other systematic investigations of complex issues.They are based on scientific processes incorporating a theoretical framework from which hypothesis about key relationships can be tested. when the focus is on understanding basic relationships, findings are more enduring. Our methods were designed to be scientifically replicable, and comparisons with results from our study done in 1993, using similar methods, support the likelihood that we have identified and measured some of the persistent relationships affecting public attitudes about nuclear security. We approached most key variables from more than one direction, using several related questions Results were then combined into robust indices having substantial predictive power about preferences for security policies . Our emphasis throughout was on finding connections between groups of factors that help identify and explain how attitudes about security issues are shaped, and how those attitudes relate to public policy and spending preferences .

Focus Groups

To assist in developing survey instruments, we conducted eight focus groups in four cities. These discussions provided valuable impressions of current public attitudes about US national security issues, perceptions of US - Russian relations, and concerns about personal security. we conduc - ted two issue discussion groups in each of three cities during june 1995: New Orleans, Louisiana; Seattle, washington ; and San Diego,California. In July we held two additional groups in Albuquerque,New Mexico to test verbal protocols and refine and verify our survey instruments. We selected the members for one group in each city to meet lower socioeconomic status

We believe these to be among influences at the individual level of analysis that affect the undestanding and interpraetation of information used in " working through" to public judgments about nuclear weapons .

Section 1.3: Research Design

we pursued four related lines of inquiry by dividing the sample population into three groups. we posed 73 base line questiuons to all respondents to provide comparative data with our 1993 study and to more clearly illuminate additional areas, such as nuclear deterrence and arms control. we presented additional questions about other aspects of security to three separate subgroups . This technique provided the opportunity to pursue related lines of inquiry in more depth than would have been possible if each respondent had been asked the full battery of questions, since the total number of questions that could have been answered would have been smaller. All questions used in each variation of the survey are in Appendix I, with frequency distributions and mean responses shown for each question. we include comparative descriptive statistics for those questions that were common to both the 1993 and 1995 surveys .

Base line Population : Primary variables

Key relationships originally identified in our 1993 survey were measured using the full 1995 sample population of 2,490 individuals. This provides over time analysis of evolving attitudes about the key indices of nuclear risks and benefits, as well as selected nuclear security policy options and spending preferences. Together, our 1993 and 1995 surveys provide two of the most extensively linked sets of data obout evolving public perceptions of nuclear security in the post - cold war era. we also asked all respondents a series of

questions to identify demographics and core belief systems. These data provide the basis for examining the interaction of demographic filters and social and political lenses with major indices of attitudes about nuclear security .

Subgroup 1: Nuclear Proliferation and Terrorism

we inquired further into public perceptions of nuclear proliferation and terrorism among a subgroup of 844 participants that we askled to evaluatee the degree of threat that seclected states might pose if they had nuclear weapons. we also asked these respondents about the kinds of general policies and actions they would support for preventing and combating proliferation and terrorism, and about whether the US should use military force to prevent selected stastes from developing nuclear weapons . Finally, we included questions to this group about the perceived accuracy of publicly released information about the environmental effects of US nuclear weapons development, and about levels of public trust in government agencies responsible for managing the US nuclear infrastructure .

Subgroup 2 : US and Russian Scientific Cooperation

In addition to questions about the safety, security, and control of US nuclear weapons, we asked a different subgroup of 834 participants about their perceptions of the security of nuclear materials and weapons in Russia . We also examined options for scientific cooperation between US and Russian nuclear scientists, to include the possibility of US investments to improve the security of Russian nuclear assets. We included questions about the degree to which respondents thought various elements of Russian society should be trusted, and about how current US relations with Russia, Chaina, japan, and germany are perceived, and how they are projected to change in the next ten years.

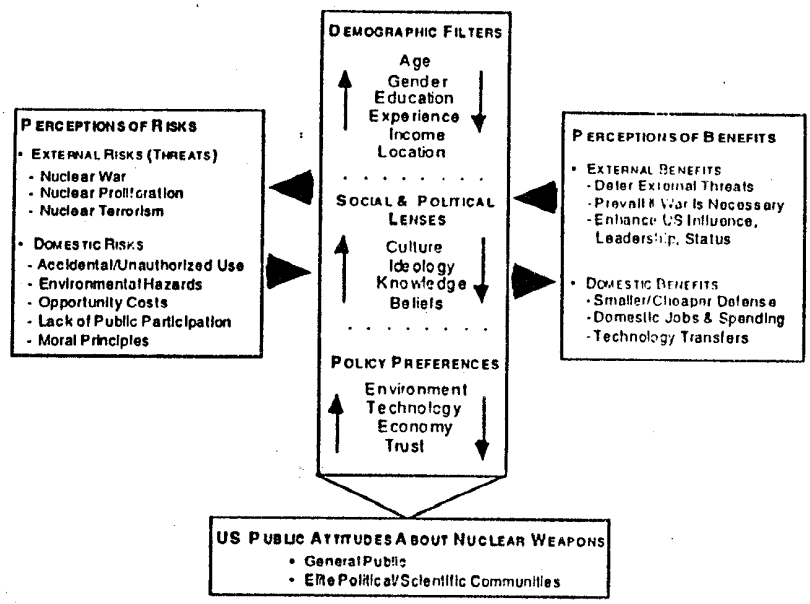
(for some issues) global contexts . It is usually the longest and most difficult stage, in evolving informed public judgment, and it is usually characterized by relatively high opinion volatility. In the third stage " resolution, " individuals become more confident that they understand enough about the relevant issuses and their contexts to hold an informed opinion, and they reach policy positions for which they are willing to be accountable . It is at this point that indistinct mass public opinions coalesce and aggregate into more stable public judgments (not necessarily consensus) were reached about the dangers and values of nuclear weapons, the Soviet Union, communism, and a host of cold war security issues .

Yankelovich credited the profound changes accompanying the end of the cold war with creating a new international context in which the security interests of the US and other states must be reevaluated and restructured in terms of security policies, investment strategies, and national priorities. If Yankelovich is right , the process of coming to public judgment about securtiy in the post - cold war era will likely require a lengthy period of " working through " a staggering array of variables whose relationbships and contexts have fundamentally changed .

Analytic Model

our study attempts to measure key variables and processes that may help illuminate how public attitudes about post - cold war nuclear security are evolving in what is probably a transition from public " consciousness raising " to the " working through " stage. We do not understand the precise nautre of each relationship and every process involved in public assesssment and evaluation of nuclear security issues, but we have hypothesized and our previous research indicates, that key variables may be related as shown in Figure 1.1.

Figure 1.1 Analytic Model



our model hypothesizes that individual and public evaluation of nuclear security is an interactive process of weighing perceptions of risks and benefits . External risks posed by others' nuclear weapons and domestic risks of our own nuclear weapons are weighed against external benefits of nuclear arms for achieving national security objectives, and domestic benefits associated with nuclear technologies and defense expenditures. The model suggests that this public weighing of nuclear risks and benefits occurs within the context of a number of factors specific to each individual. Among them are the following variables :

* Demographic factors such as age, gender, education , income training, experience, and place of residence .

* Social and political lenses shaped by political culture(world veiw), ideology, subject Knowledge, and general belief systems .

* Preferences about related public policy issues such as the environment, the role of technology in society, economic considerations, and trust in public institutions and processes .

* Investigate public perceptions and preferences concerning nuclear weapons safety, security, and control. Emphasis is placed on public views about interactions between US and Rusian secientists to enhance the security of Russian nuclear assets .

* Measure selcted dimensions of personal security in the US, and investigate public preferences for private and government sponsored investments in security - related technologies .

section 1.2 : conceptual Approach

PUBLIC ATTITUDES ABOUT SECURITY REFLECT COMPLEX INTERACTIONS of related variables at three distinct levels of analysis : individual, national, and global. At the most basic level, personal security involves the physical, socioeconomic, and psychological security of individuals. At the national level, security concerns are integrated into broader, more complex social and cultural contexts affecting spending priorities, domestic politics, and national identity . Even wider security concerns at the global or systemic level inulude collective and shared behaviors and risks, such as international conflict, world health, and global environmental problems.

Nuclear weapons affect the security of individuals and publics at all three levels,and so much of our investiga - tion focuses on nuclear security issues. How some states restructure their nuclear weapons establishments , the degree to which nuclear weapons capabilities proliferate to other states,the management of materials used in nuclear weapons, and the likelihood of nuclear conflict and nuclear terrorism all have the potential to exert impotant influence on security at each level .

Results of our national security survey in 1993-94 indicate that public attitudes about nuclear weapons are partially a function of risk-benefit assessments. publics must integr- ate broad, imprecise perceptions and often superfi- cial understandings of the external risks posed by others' nuclear assets to their

that of their families,nations, and the world at large. Additionally, those publics that live in nuclear stastes and those most affected by the actions of nuclear states must weigh the risks to themselves and loved ones derived from the ways that nuclear assets are managed and used. But publics must also decide if nuclear weapons and materials provide certain utilites and benefits and the degree to which they may or may not counterbalance perceived nuclear risks.

Few individuals, or even governments, have sufficient information, training, experience, and resources to perform comprehensive risk benefit calculations of such complex sets of variables. yet in the US and other representative political systems, public perceptions, attitudes, and preferences must be factored into nuclear security policies. The end of the cold war and the disintegration of one of the world's two military superpowers changed many of the security relationships that evolved during the first half - century of the nuclear age. These events have also changed many of the assumptions with which publics and their governments have previously rationalized nuclear strategies and policies. The ways that individuals and publics are assimilating these profound changes and how they are influencing risk - benefit judgments have important consequences for shaping future security policies .

Evolvomg Public Judgment

In Coming to public judgment, Daniel Yankelovich identitied three stages in the process of evolving public judgment about complex policy issues.[2] In stage one, which he termed " consciousness raising," the public bnecomes aware of an issue or set of issues and associated implications. In stage two, " working through, " members of the public confront the need for change and wrestle with competing policy options and choices in a process of approximating and weighing pros and cons, risks and benefits, moral constraints and political compromises . The process requires individual influences and inclinations to be integrated within larger social, national, and

CHAPTER ONE

INTRODUCTION AND OVERVIEW

THIS IS THE SECOND REPORT IN OUR ONGOING STUDY OF US PUBLIC attitudes about post- cold war security. It examines perceptions of physical security at three levels of analysis.The systemic level includes pereceptions of international factors that are not readily controlled by any single state, such as nuclear proliferation and terrorism. The state level involves public views of analysis, pereceptions of factors in influencing personal security are primary. We report findings from a national survey of the US public about their views of security at all three levels of analysis. Emphasis is placed on nuclear security, but we also examine perceptions regarding the influence of crime on personal security. The purpose of our continuing study is to measure evolving relationships that are interacting to shape the postcold war security environment.

section 1.1: objectives

OUR FIRST REPORT ANALYZED RESULTS OF A NATIONAL SURVEY conducted in late 1993 and early 1994 that included members of the general public and key US scientific communities.[1] This second report presents the findings of a nationwide survey of 2,490 members of the US public. Our goals were to detemine how public opinion of nuclear security issues is evolving in the post - cold war environment and to identify parameters that may influence national debate about security policies. Specific objectives were as follows :

* Measure US public perceptions of national and international security issues, with special emphasis on nuclear security.

* Identify evolving trends in public opinion about US nuclear weapons policies and associated research, development, and investments. Key comparative dimensions include perceptions of external and domestic risks and external and domestic benefits of nuclear weapons.

Us National Security Surveys 1993-1995

Kerry G. Herron* Hank C. Jenkins- Smith*

Vol:5 No: 2 January 1997

* **Kerry G. Herron, Ph. D. , Associate Director, Security Studies**
Hank C. Jenkins-Smith, Ph. D. , Director