The Patience Gap: Temporal Preferences and Nuclear Negotiations

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Introduction
The Model
Implications for North Korea
Conclusion

Two Perspectives
Argument

North Korea an unlikely proliferator: low nuclear capacity

We show: low capacity creates a bargaining problem

North Korea proliferated *because* of its low capacity, not despite it

Introduction
The Model
Implications for North Korea
Conclusion

Two Perspectives
Argument

Agreements only possible when nonproliferator's maximum acceptable concession is larger than proliferator's minimum necessary concession

Harder to achieve when proliferator is more patient than nonproliferator

Longer development times exacerbate patience gap

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

Nuclear weapons provide security benefits

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

Nuclear weapons provide security benefits

But they also take a long time to build

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

Nuclear weapons provide security benefits

But they also take a long time to build

And they are expensive

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

Nuclear weapons provide security benefits

But they also take a long time to build

And they are expensive

And they impose externalities

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

Let's represent these incentives as follows:

1. $b > 0$: benefits to proliferating
2. $c > 0$: cost to build
3. $e > b$: externality to nonproliferator
4. $\delta_i \in [0, 1]$: i's temporal discount for each period
5. $t \geq 0$: number of periods of delay until weapon built

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

Let x be a transfer from nonproliferator to proliferator

Make deals "easy" by supposing they are binding

Proliferator needs $x \geq \delta_P^t b - c$ to accept

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

Nonproliferator pays x to secure a deal

It finds a deal acceptable if $-x \geq -\delta_N^t e$

So a deal requires $x \leq \delta_N^t e$

Introduction
The Model
Implications for North Korea
Conclusion

Basic Nuclear Incentives
Setup
Proliferator's Minimal Demands
Nonproliferator's Maximal Concession
When Are Deals Possible?

From last two slides, we need $x \geq \delta_P^t b - c$ and $x \leq \delta_N^t e$

Only possible if $\delta_P^t b - c \leq \delta_N^t e$

Guaranteed to hold if nonproliferator is more patient than proliferator

But can fail if proliferator is more patient and externality is not too much larger than benefit

Introduction
The Model
Implications for North Korea
Conclusion

Who Is More Patient?
The Effect of Development Times
North Korea's Low Capacity
Outcome

Standard perspective: autocratic regimes have longer time horizons than democracies

Length of NK leader tenures: 24 years, 17 years, 7+ years

Length of US leader tenures: 4 or 8 years

Introduction
The Model
Implications for North Korea
Conclusion

Who Is More Patient?
The Effect of Development Times
North Korea's Low Capacity
Outcome

Deals most likely to fail when development times fall in a middle range

When development is instanteous, differences in patience are irrelevant

When development takes forever, neither places any value in post-proliferation time frames

Introduction
The Model
Implications for North Korea
Conclusion

Who Is More Patient?
The Effect of Development Times
North Korea's Low Capacity
Outcome

Introduction
The Model
Implications for North Korea
Conclusion

Who Is More Patient?
The Effect of Development Times
North Korea's Low Capacity
Outcome
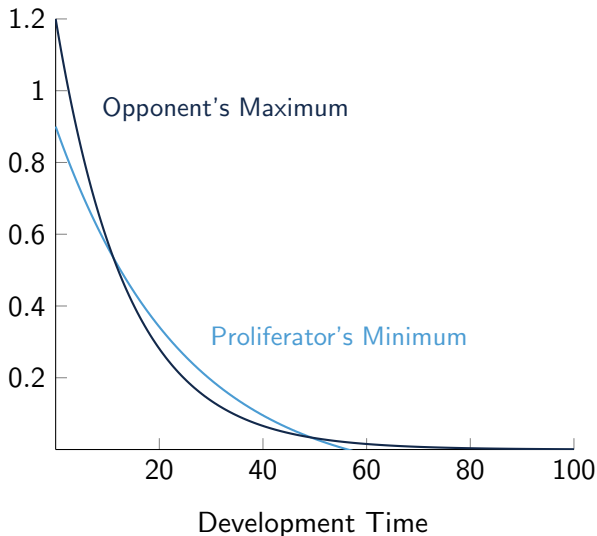
Almost no domestic know-how at beginning of exploration

Little foreign assistance on major nuclear hurdles

Slow at every step of the way: e.g., 50 years to produce enough plutonium for 10 bombs

Introduction
The Model
Implications for North Korea
Conclusion

Who Is More Patient?
The Effect of Development Times
North Korea's Low Capacity
Outcome

Paltry U.S. offers

North Korea demonstrating high reservation values despite technical limitations

Introduction
The Model
Implications for North Korea
Conclusion

Wrap Up
Information

Agreements may be impossible when proliferator is more patient than nonproliferator

Longer proliferation times exacerbate problem

Helps explain North Korea's nuclear arc

Introduction
The Model
Implications for North Korea
Conclusion

Wrap Up
Information

Thanks!

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