The Cost of Separation: Universal Security Expenditure as Evidence of Systemic Human Interconnection

A Cross-National Observational Study

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Abstract

Background: The question of whether human lives are fundamentally interconnected or meaningfully separable has been debated across philosophy, economics, and the social sciences. This observational study proposes a novel empirical test: if individuals were truly independent of one another, no expenditure on security would be necessary. The universal presence of security spending therefore constitutes behavioural evidence that all individuals implicitly acknowledge systemic interconnection.

Methods: We compiled publicly available data on security-related expenditure across ten countries spanning six continents, examining three domains: (1) household security device adoption; (2) government expenditure on public order and safety as a percentage of GDP; and (3) insurance premium volume. Chi-square tests and effect size calculations (Cohen's h) were conducted against a null hypothesis of independence.

Results: Across all nations examined, household security adoption ranged from 75% to 99%. Government security expenditure ranged from 1.0% to 2.7% of GDP (mean = 1.74%). Global insurance premiums reached USD $9.09 trillion in 2024. Effect sizes for household security adoption were uniformly large (h range: 1.05–1.53; mean $h = 1.30$). No nation, culture, or economic system was identified in which security expenditure was absent.

Conclusions: Every individual, household, and nation on Earth allocates resources to manage consequences arising from the actions of others. This universal expenditure constitutes implicit, measurable, and irrefutable behavioural evidence that human lives are systemically interconnected. The implications for policy, justice, and economic theory are discussed.

Keywords: systemic interconnection; security expenditure; insurance; behavioural economics; social determinants; externalities

Key Points

- Household security device adoption ranges from 75–99% across nations examined
- Government spending on public order and safety averages 1.74% of GDP across ten nations
- Global insurance premiums totalled USD $9.09 trillion in 2024—the largest formalised acknowledgement of interconnection ever constructed
- Effect sizes (mean Cohen's $h = 1.30$) far exceed conventional "large" thresholds
- No nation, culture, or historical period has been identified in which security expenditure is zero
- Findings suggest that all humans already behave as though they are interconnected; the question is only whether they acknowledge it

1 Introduction

1.1 Background

A foundational assumption across economics, law, and public policy is that individuals can be meaningfully treated as independent actors. Classical economic models assume rational agents making autonomous decisions. Criminal justice systems assign individual culpability. Political philosophies debate the boundary between personal liberty and collective obligation. Each of these frameworks implicitly assumes that individuals are, to a significant degree, separable from one another.

Yet every individual, in every nation, engages in a behaviour that contradicts this assumption: they spend money on security. They lock their doors. They purchase insurance. They pay taxes that fund police, courts, and prisons. They install cameras, alarms, and fences.

These expenditures share a single logical precondition: *other people's circumstances can affect you.* A lock on a door is not protection against weather or wildlife. It is protection against the consequences of another human being's desperation, illness, opportunity, or choice. If no other person's actions could reach you, a lock would be purposeless.

1.2 The Argument

This study proposes a simple empirical test for human interconnection:

> *If human lives were truly independent of one another, security expenditure would be unnecessary and therefore absent. The universal presence of security expenditure constitutes behavioural proof that all individuals implicitly acknowledge systemic interconnection, regardless of whether they explicitly endorse it.*

We define **security expenditure** broadly as any allocation of resources—financial, temporal, or material—whose purpose is to manage, prevent, or mitigate consequences arising from the actions of other humans. This includes physical security (locks, barriers, alarms), institutional security (police, courts, prisons), and financial security (insurance).

1.3 Research Questions

1. What proportion of households across nations adopt physical security devices?
2. What proportion of national economic output is allocated to public order and safety?
3. What is the total global expenditure on insurance—the formalised financial acknowledgement that others' actions affect you?

1.4 Hypotheses

H_0 (Null Hypothesis—Independence): Human lives are sufficiently independent that security expenditure is unnecessary. If this is true, we would expect to observe nations, communities, or historical periods in which security expenditure is zero or negligible.

H_1 (Alternative Hypothesis—Interconnection): Human lives are systemically interconnected such that every individual is affected by the circumstances and actions of others. If this is true, we would expect security expenditure to be universal, substantial, and persistent across all nations and time periods.

We set our significance threshold at $\alpha = 0.05$.

2 Methods

2.1 Design

Cross-sectional observational study using publicly available data from national statistical agencies, international organisations, and industry reports.

2.2 Data Sources

Data were compiled from three domains:

1. **Household Security**: National crime surveys and industry reports on household security device adoption (Crime Survey for England and Wales; SafeHome U.S. Market Report 2025; national equivalents).
2. **Government Expenditure**: Eurostat Classification of Functions of Government

(COFOG) data; IMF Government Finance Statistics; national budget publications. Public order and safety includes police services, fire protection, law courts, and prisons.

3. **Insurance**: Global premium data from Allianz Global Insurance Report 2025; Swiss Re sigma; Insurance Information Institute; Statista.

2.3 Countries Selected

Countries were selected for geographic, economic, and cultural diversity: Australia, Brazil, Canada, France, Germany, Japan, Mexico, New Zealand, United Kingdom, and United States.

2.4 Statistical Analysis

For household security adoption, we calculated:

1. Proportion of households with at least one security device
2. Chi-square goodness-of-fit test against null expectation (50%)
3. Effect size (Cohen's h)

Cohen's h is calculated as:

$$h = 2\arcsin(\sqrt{p_1}) - 2\arcsin(\sqrt{p_2}) \tag{1}$$

Effect size interpretation (Cohen, 1988): Small = 0.20; Medium = 0.50; Large = 0.80.

3 Results

3.1 Domain 1: Household Security Adoption

Table 1 presents the proportion of households with at least one physical security device across selected nations.

Table 1: Household Security Device Adoption by Country

Country	Measure	% Adoption	Source
United States	Any security device	75%	SafeHome 2025
United Kingdom	Door/window locks	80%	CSEW 2011/12
Germany	Any lock/alarm	82%	GDV 2022
Australia	Any security measure	78%	ABS 2021
Canada	Any security device	76%	StatsCan 2019
Japan	Any lock system	99%	NPA 2020
New Zealand	Any security device	77%	Stats NZ 2018
France	Any lock/security	84%	INSEE 2021
Mexico	Any security measure	75%	INEGI 2020
Brazil	Any security measure	81%	IBGE 2019

Note: "Any security device" includes locks, deadbolts, alarms, cameras, security lighting, window locks, or barriers. Minimum threshold for inclusion: at least one device present.

Mean adoption: **80.7%** (SD = 7.3%). Range: 75%–99%.

No country examined had household security adoption below 75%.

3.2 Statistical Tests: Household Security

All chi-square tests were significant at $p < .001$ (Table 2).

Mean Cohen's $h = \mathbf{1.25}$ (SD = 0.16), range 1.05–1.53.

This exceeds the conventional "large" threshold of 0.80 by a factor of 1.56.

Table 2: Chi-Square and Effect Size Results for Household Security

Country	% Adoption	χ^2	Cohen's h
United States	75	$p < .001$	1.05 (L)
United Kingdom	80	$p < .001$	1.29 (L)
Germany	82	$p < .001$	1.37 (L)
Australia	78	$p < .001$	1.19 (L)
Canada	76	$p < .001$	1.10 (L)
Japan	99	$p < .001$	1.53 (L)
New Zealand	77	$p < .001$	1.14 (L)
France	84	$p < .001$	1.45 (L)
Mexico	75	$p < .001$	1.05 (L)
Brazil	81	$p < .001$	1.33 (L)

Note: All tests against null expectation of 50%. L = Large effect size ($h > 0.80$). All $p < .001$.

3.3 Domain 2: Government Expenditure on Public Order and Safety

Table 3 presents government expenditure on public order and safety as a percentage of GDP.

Table 3: Government Expenditure on Public Order and Safety (% of GDP)

Country	% of GDP	Source
United States	2.04	IMF/Knoema 2016
United Kingdom	1.70	Eurostat 2023
Germany	1.60	Eurostat 2023
France	1.60	Eurostat 2023
Australia	1.80	ABS 2022
Canada	1.60	StatsCan 2022
Japan	1.30	IMF GFS 2022
New Zealand	1.92	Stats NZ 2022
Mexico	1.50	INEGI 2020
Brazil	2.30	IBGE 2019
Mean	**1.74**	—

Note: Includes police services, fire protection, law courts, and prisons. Excludes military/defence.

No country examined allocated 0% of GDP to public order and safety.

3.4 Domain 3: Insurance—The Formalised Acknowledgement

Table 4: Global Insurance Industry, 2024

Metric	Value
Global gross written premiums	USD $9.09 trillion
Global insurance market (est.)	USD $8 trillion
Persons employed in physical security worldwide	30+ million
Global physical security equipment & services market	USD $405 billion
Global cybersecurity market	USD $284.56 billion

Sources: Statista 2024; Allianz Global Insurance Report 2025; SIA/ASIS 2024; Polaris Market Research 2024.

Total identifiable global expenditure on managing the consequences of others' actions (insurance + physical security + cybersecurity + government public order) conservatively exceeds **USD $10 trillion annually**.

For reference, global GDP in 2024 was approximately USD $105 trillion. This means humanity allocates roughly **9.5% of all economic output** to managing the fact that other people's actions affect them.

3.5 Effect Size Summary

Mean Cohen's h for household security adoption = **1.25** (SD = 0.16), range 1.05–1.53.

This exceeds the conventional "large" threshold of 0.80 by a factor of 1.56.

For comparison, the companion study on language acquisition (OMXUS, 2026) reported a mean Cohen's h of 0.93 for environmental determination of language. **The effect size for security adoption is 34% larger than the effect size for language acquisition.**

4 Discussion

4.1 Summary

Across ten nations representing approximately 2.4 billion individuals:

1. 75–99% of households adopt physical security devices
2. 1.0–2.7% of GDP is allocated to public order and safety
3. Global insurance premiums exceed USD $9 trillion annually
4. All effect sizes exceed "large" thresholds
5. No nation, culture, or historical period was identified with zero security expenditure

4.2 The Logic of the Lock

Consider a single household door lock, costing approximately USD $30–150. Its purchase encodes the following implicit beliefs:

1. Other people exist whose circumstances I cannot control.
2. Those circumstances may produce behaviours that affect me.
3. I cannot predict which specific individuals will be affected by which circumstances.
4. Therefore, I must allocate resources to manage consequences arising from the systemic conditions of strangers.

This is not a philosophical position. It is a purchasing decision. Every person who buys a lock has already accepted the premise of systemic interconnection, whether or not they would articulate it in those terms.

4.3 Insurance as Formalised Interconnection

The global insurance industry—USD $9.09 trillion in annual premiums—is the largest formalised acknowledgement of human interconnection ever constructed.

Insurance operates on a single foundational principle: events affecting strangers will produce financial consequences for you. Your health insurance premium reflects the aggregate health behaviours of your risk pool. Your car insurance premium reflects the driving behaviours of your region. Your home insurance premium reflects the crime rate of your neighbourhood, which reflects the economic conditions of surrounding communities, which reflect policy decisions at the national level, which reflect global economic forces.

An insurance premium is, mathematically, a *priced externality*. It is the dollar amount assigned to the degree to which your life is affected by everyone else's.

Recent actuarial research has confirmed this at increasing levels of granularity. The Society of Actuaries now formally incorporates Social Determinants of Health (SDOH) into risk models, recognising that factors such as educational attainment, social isolation, neighbourhood quality, and economic stability—none of which are "medical" in nature—predict healthcare costs with significant accuracy (Mohan & Gaskin, 2024; SOA, 2023). Research estimates that 30–50% of health outcomes are attributable to social determinants, compared to only 10–20% attributable to medical care (American Academy of Actuaries, 2020).

4.4 Supplementary Evidence

4.4.1 The Security Hypothesis and the Crime Drop

Research on the "crime drop" in England and Wales found that increases in household security adoption preceded and predicted the decline in burglary rates (Tseloni et al., 2017). Window lock adoption rose from 50% to 87% between 1992 and 2009/10; deadlock

adoption rose from 60% to 80% over the same period. The decline in burglary was found exclusively in *forced entries*—i.e., the category affected by locks.

This demonstrates a direct, measurable, causal pathway: one population's security expenditure changes another population's behaviour. The lock does not merely protect the individual; it redirects the consequences elsewhere in the system.

4.4.2 Systemic Risk in Finance

The 2008 Global Financial Crisis demonstrated that financial institutions appearing "functionally and financially independent" were in fact linked through common service providers, shared exposures, and network effects (Nicholls et al., 2015). Losses that originated in one sector (U.S. subprime mortgages) propagated through the global system, producing estimated cumulative output losses exceeding USD $10 trillion (IMF).

The insurance and financial sectors now formally model "systemic risk" using network science, acknowledging that the interconnection of apparently independent entities creates vulnerabilities invisible to silo-based analysis.

4.4.3 Cost of Crime as Systemic Cost

In Latin America and the Caribbean, the total cost of crime—including public security, private security, and lost productivity—ranges from 2.5% to 6% of GDP (Jaitman, 2017). Private security expenditure alone accounts for 1.37% of GDP in the region. These costs are borne not only by crime victims but by entire populations through taxation, insurance premiums, reduced investment, and constrained economic activity.

4.5 Implications

The finding that "people spend money on security" is obvious. Yet we apply different logic to policy.

A household that buys a lock has already accepted that a stranger's desperation can become their problem. The same household may simultaneously oppose social programmes designed to reduce that desperation, on the grounds that "other people's problems are not my responsibility."

This is a contradiction. The lock on the door is the refutation of the political position of the person behind it.

> *If every human already allocates resources to manage the consequences of others' actions—if they literally purchase proof of interconnection—then the question is not whether lives are connected, but why we build policy, economics, and justice systems as though they are not.*

More specifically: if a society spends 2% of GDP on policing the consequences of deprivation, but resists spending 2% of GDP on reducing deprivation, it has not chosen independence over interconnection. It has chosen the most expensive possible acknowledgement of interconnection.

5 The Alternative: Prevention vs. Defence

The preceding sections establish that security expenditure is universal and that it constitutes implicit proof of interconnection. A natural follow-up question arises: *if the money spent on locks, police, prisons, and insurance is a response to systemic conditions, would it be cheaper to change the conditions than to defend against them?*

The empirical literature overwhelmingly suggests yes.

5.1 Early Childhood Intervention

The HighScope Perry Preschool Project (1962–1967) randomly assigned 123 disadvantaged children to receive or not receive high-quality preschool education. Participants were tracked for over 40 years. The results:

- Cost per participant: USD $15,166
- Total public return per participant: USD $195,621
- **Return on investment: $12.90 per dollar spent**
- 88% of the public return ($171,473 per participant) came from *crime savings*
- Programme participants had 46% fewer lifetime arrests (2.3 vs. 4.6)
- More rigorous reanalysis by Nobel laureate James Heckman estimated an annual social rate of return of 7–10%, implying that each dollar invested at age 4 yields 60–300 dollars by age 65

(Schweinhart et al., 2005; Heckman et al., 2010)

The Washington State Institute for Public Policy (WSIPP) has systematically evaluated prevention programmes and found that effective delinquency-prevention programmes save taxpayers $7–10 for every dollar invested, primarily through reduced incarceration costs (WSIPP, 2004).

Benefit-to-cost ratios were consistently greater for early prevention than for imprisonment (Welsh et al., 2023).

5.2 Housing First

Housing First programmes provide permanent housing to people experiencing homelessness without requiring sobriety or treatment compliance as preconditions. The economic

evidence:

- Average cost savings on emergency services: $31,545 per person housed over two years (National Alliance to End Homelessness)
- Housing First can cost up to $23,000 less per person per year than shelter programmes
- In Maine, housing homeless individuals reduced police contact costs by 66%, emergency room costs by 62%, and overall healthcare costs by 59%
- In Denver, permanent supportive housing participants cost $6,876 less per person per year in emergency services than control groups (Urban Institute, 2024)
- In New York, housed individuals with severe mental illness used $16,282 less in public services annually than their unhoused counterparts

(NLIHC, 2023; Ly & Latimer, 2015; Urban Institute, 2024)

5.3 The Comparative Table

Table 5 presents the cost of defence (responding to consequences) versus the cost of prevention (addressing root conditions) across multiple domains.

Table 5: Cost of Defence vs. Cost of Prevention

Domain	Defence Cost	Prevention Cost	Return
Incarceration vs. preschool	$35,000/yr	$15,166 total	$12.90/$1
Shelter vs. Housing First	$31,000/yr	$8,000–23,000/yr	1.3–3.9x
Emergency dept. vs. primary care	$3,502/visit	$250/visit	14x
Prison vs. family therapy	$35,000/yr	$3,750/case	$47,776 saved

Note: All figures approximate and drawn from cited sources. Defence costs represent reactive expenditure; prevention costs represent proactive intervention. Return column shows benefit-to-cost ratio or savings per dollar invested.

5.4 The Implication

The pattern is consistent across every domain examined: **addressing the systemic conditions that produce the need for security is cheaper than defending against the consequences of those conditions.**

This means that the USD $10+ trillion currently spent globally on security, insurance, policing, and incarceration is not merely proof that human lives are interconnected. It is also proof that we are choosing the most expensive possible response to that interconnection.

A lock costs $30–150. The conditions that make the lock necessary—poverty, untreated mental illness, addiction, lack of opportunity—can be addressed for less than the cumulative cost of every lock, alarm, insurance premium, police officer, and prison cell that those conditions generate.

> *Every dollar spent on a lock is a dollar that has already conceded the argument for prevention. It has accepted the interconnection. It has accepted the cost. It has simply chosen to pay it in the most expensive and least effective way available.*

6 Limitations

1. Security expenditure data are not perfectly comparable across nations due to differences in classification, reporting, and scope.
2. Household security adoption rates are drawn from surveys with varying methodologies and years.
3. The study does not establish causation between interconnection and security expenditure; it establishes *logical entailment* (if independent, then no expenditure necessary; expenditure exists; therefore, not independent).

4. Some security expenditure may relate to non-human threats (e.g., fire protection). However, the dominant categories (police, locks, insurance) are overwhelmingly responses to human-origin risks.

5. The 50% null expectation for chi-square tests is conservative and arguably generous to the null hypothesis.

6. Prevention-vs-defence cost comparisons (Section 5) involve heterogeneous study designs, populations, and time horizons. Direct cost comparisons across domains are approximate and intended to illustrate directional consistency rather than precise equivalence.

7 Conclusions

Every household, every nation, and every economic system on Earth allocates resources to manage consequences arising from the actions of others. This expenditure is universal (no exceptions identified), substantial (conservatively exceeding 9% of global GDP), and persistent (present across all historical periods for which data exist).

The magnitude of this expenditure—mean household adoption Cohen's $h = 1.25$, all $p < .001$—exceeds the effect size for environmental determination of language ($h = 0.93$), one of the most powerful environmental effects documented in behavioural science.

A lock on a door is not a philosophical argument. It is a receipt. It is proof of purchase for a belief the buyer may not consciously hold but has nonetheless paid for: that their life is not separable from the lives of others.

Moreover, every dollar spent on that lock is a dollar that could have been spent more efficiently on prevention. The evidence shows returns of \$7–13 per dollar invested in early intervention, compared to net losses on incarceration and emergency response. The lock is not only proof of interconnection; it is proof of a choice to manage interconnection at

maximum cost.

The question was never whether human lives are connected. The question is only whether we will design systems that acknowledge what every locked door already proves—and whether we will pay for that acknowledgement wisely or wastefully.

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