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# Terrorist Acquisition of Biological and Chemical Agents

*Implications for Prevention and Preparedness*

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# The CB threat spectrum

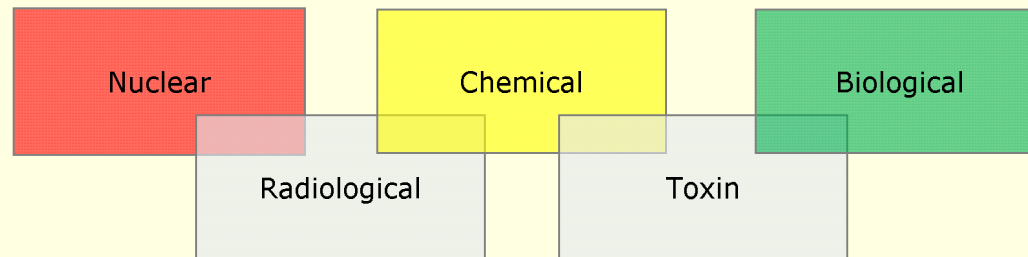
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- n War scenarios
- n Terrorism
- n Criminal acts
  
- n Consideration and availability of different CB agents
  - n Depends on intent
  - n Depends on availability
  - n Depends on technical skills and structure of the terrorist/criminal entity

# CBRN incidents

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## n Non-conventional weapon categories



## n Most terrorist/criminal incidents are in the grey areas

- n Toxins

- n Radiological materials

## n Agents in grey areas are easier to acquire

- n Enable incidents involving individuals; small groupings

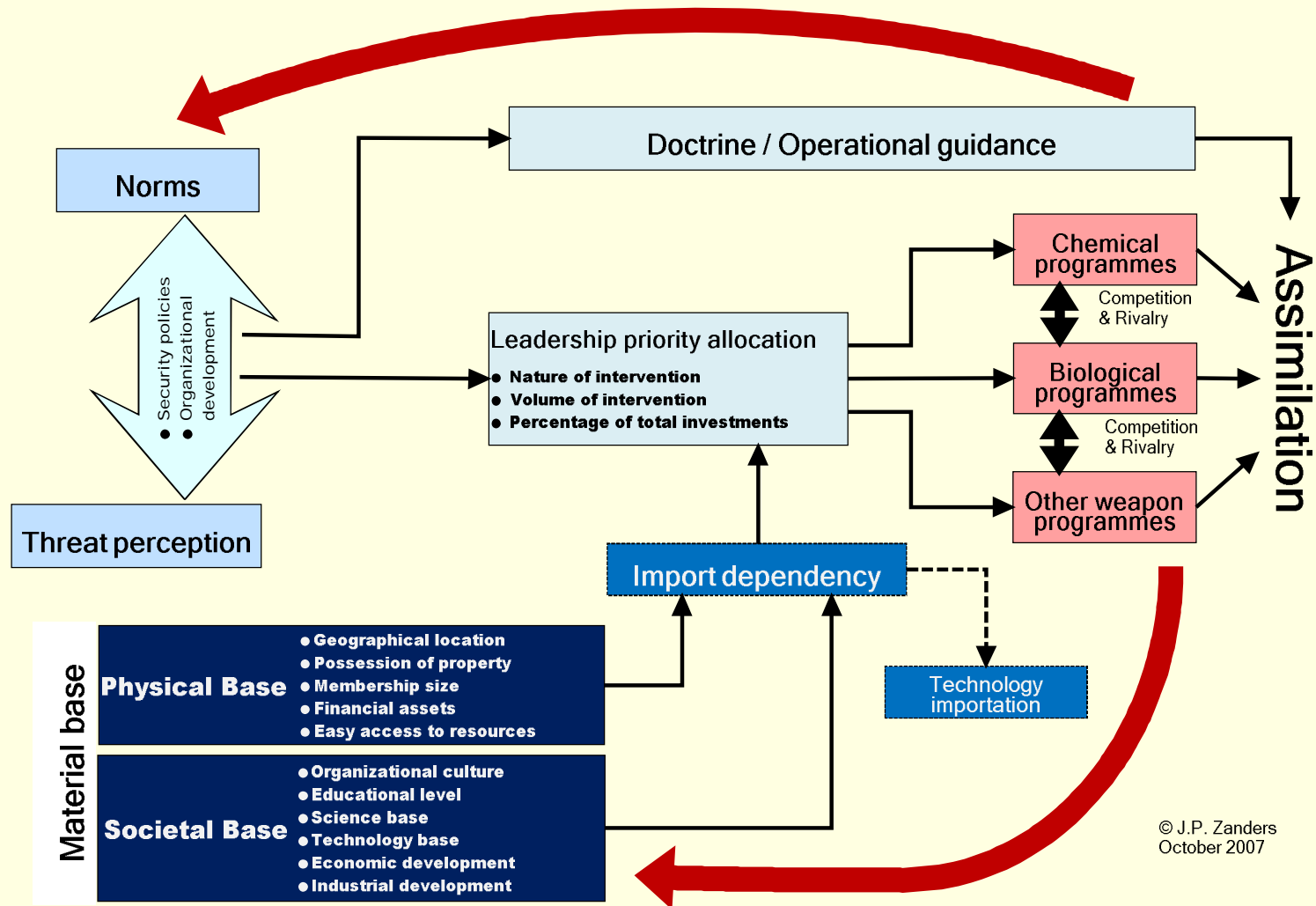
- n Opportunity may play a significant role in those incidents

# Organising terrorism with CB agents for mass casualties

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- n Highly (vertically) integrated organisation
  - n Charismatic leadership
- n Skills required within organisation
  - n Cannot be hired
  - n Specialists must be convinced of organisation's ideology
- n Functional specialisation
  - n Different steps in armament dynamic require specific skills
  - n Places burden on recruitment of specialists
  - n Failure to do so has major impact on both armament dynamic and ability to deploy and use weapons
- n Elaborate preparations needed (large footprint)
  - n Research facilities
  - n Testing ranges
  - n Production units
- n Logistical burden
  - n Technology acquisition (high import dependency)
  - n Weapon deployment
- n Dissemination may be technologically most challenging

# The armament dynamic



# Norms

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- n Error to assume that terrorist organisation has no norms or values
  - n Organisation embedded in society that produced it
  - n Certain values and norms will be deviant (reaction)
  
- n Normative behaviour is correlated to goals
  - n Does organisation need broader societal appeal?
  - n Which elements will be emphasised / suppressed?
  
- n Norm-setting by leadership
  - n Accepted by rank and file (e.g., impact of charismatic leadership)
  - n Indoctrination / brainwashing techniques
  - n Limited scope for questioning
  - n Isolation from broader society
  - n Low tolerance for dissidence (punishment; physical elimination)
  
- n Tension:
  - n Charisma is opposite of institutionalisation (needed for weapon programmes)
  - n Source of set of group dynamics that may lead to group's demise

# Threat perceptions

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- n Threat perception is inherent in a terrorist organisation
  - n Lives in active conflict with surrounding society
  - n Threat = existential
    - n Law enforcement / military operation may lead to elimination of organisation (no freedom from prosecution)
    - n Possibility of competition from other organisations
    - n Also on level of individual: shared experience
- n Threat perceptions tend to increase
  - n Paranoia fed by isolation from society
  - n Perceptions will increase when on verge of acquiring certain operational capabilities
    - n Concerns about footprint of operational preparations
    - n Response to real or perceived (re-)actions by law enforcement authorities
- n Sometimes artificially inflated by leadership for internal control
  - n May become difficult to manage
  - n Particularly if threats are linked to specific predicted events or dates

# Security policies

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- n Significant field of tension between norms & threat perceptions
  - n Determines the security policies
    - n Informs doctrinal / operational guidance development
  - n Affects internal organisational development
    - n How will the organisation structure itself to achieve goals?
    - n How does it affect priority setting?
    - n How does it inform choice of means to achieve goals?
- n Prevailing norms will affect choice of means
- n Acquisition of capabilities affects normative behaviour
  - n Development of rationale to justify capabilities (to own members)
  - n Growth of threat perceptions
    - n Fear of discovery by outside world
    - n Fear of treason / betrayal
    - n Increases urgency of weapon programmes
  - n Feedback loop from assimilation
- n Rising threat perceptions affect normative restraint
  - n Certain courses of action become gradually acceptable
  - n Acute existential threat may produce extreme (pre-emptive) actions



# Material base

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- n Preconditions determining ability to set up BW armament dynamic
- n 2 components
  - n Physical base:
    - n Relates to host society
    - n Virtually impossible for terrorist organisation to alter these factors
      - § Move to different society
      - § Set up branches in other societies
      - § Options, however, have impact on organisational goals, local recruitment options, or ability to blend in society
  - n Societal base:
    - n Relates to terrorist organisation itself
    - n May take a very long time to effect
- n Shortcomings in the material base determine import dependency
  - n What cannot be developed or acquired domestically, must be acquired from outside the terrorist organisation

# Physical base

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- n Where is the organisation located?
- n Does it own property?
- n Do cultural, educational, economic, scientific and technological characteristics of the host society promote the BC armament dynamic?
- n Ease of member recruitment
  - n Particularly regarding required skills
  - n Skills cannot be (commercially) hired
  - n Need to convince highly educated or trained individuals of organisational ideology (impact of functional specialisation)
- n Ease of access to necessary resources (e.g., precursors; laboratory equipment, production technology)
- n Ease of accumulation of financial assets
  - n Wealthy host society
  - n Tax breaks for certain types of organisation

# Societal base

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- n Organisational culture
  - n Decision-making structure
  - n Hierarchical structure, e.g.,
    - n Vertical integration
    - n Cell-based structure
    - n Loose affiliation of subsidiary / associated structures
  - n Leadership characteristics
- n Level of education, science & technology within the organisation
  - n Will depend on recruitment strategies
  - n Consideration of specific skills required for armament dynamic & operational planning and execution of attacks (functional specialisation)
- n Economic development
  - n Acquisition and management of financial and human assets
- n Industrial development
  - n Setting up of necessary infrastructure for research and development
  - n Establishment and running of production facilities
  - n Establishment of technology acquisition infrastructure and procedures (e.g., front companies and legitimate businesses)

# Leadership priority allocation

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- n BC armament dynamic does not exist for its own sake
  - n What are the terrorist organisation's strategic (top-level) goals?
- n What instruments does it seek to acquire / develop in pursuit of those goals?
  - n How does it mobilise its resources in function of those goals?
  - n How does it distribute its resources over the different programmes supporting those goals?
  - n Loose affiliation of subsidiary / associated structures
- n Which are the criteria for distribution of (always limited) resources?
  - n Purely managerial considerations?
  - n Favouritism by leadership?
  - n Impact of stimulation or emergence of competition among different programmes
  - n Relative influence on decision procedures of senior members
- n How are decisions influenced by external developments (e.g., emergence of a clear existential threat)

# Weapon programmes

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- n Goal—instrument relationship in selection of weaponry
  - n Large ambitions will lead to a selection of a wide variety of weaponry
    - n A single type of weaponry is unable to achieve all goals
    - n BC agents can only play certain roles
  - n For more specific or time-limited ambitions, a single weapon category may suffice
    - n Less inclination towards large investments in own development and production of weapons (e.g., complex BC agents)
  
- n Rivalry and competition
  - n However large the financial assets, resources are always limited
  - n There will be competition / rivalry for the share of scarce resources among the people responsible for each of the programmes
  - n Chemical and biological programmes are most likely to be run by different individuals
  
- n Even with nihilistic organisations, the question must be posed about the added value a particular type of weaponry has over another one (particularly in the light of their acquisition difficulties)

# Development of operational guidance

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- n Informed by ambitions of the terrorist organisation
  - n Influenced by normative standards
  - n Influenced by threat perceptions and their interaction with normative standards
  
- n Top-level goals
  - n How does it wish to achieve them?
  - n Which types of weaponry are required to achieve these goals?
    - n Do BC agents serve these goals, and if so, how?
  - n Can the group achieve or otherwise acquire these weapons?
    - n If not, necessary adaptation of top-level goals
  
- n Tactical goals
  - n Breakdown into sub-goals and target identification
  - n Operational planning
  - n How does it organise its forces to employ those weapons?
    - n Force structures
    - n Identification of specialised skills
    - n Training
  
- n Adaptation
  - n Weapon development may create strategic and tactical opportunities
  - n Complications in weapon development impose constraints
  - n Impact of evolution in threat perceptions and their interaction with prevailing norms

# Assimilation

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- n The degree to which the developed weapons and the operational guidance are integrated with each other
- n Variations at any stage of the armament programme will affect the nature and degree of assimilation
  
- n This outcome affects:
  - n The quality of the weaponry (BC agents) developed
  - n The type of weaponry developed
  - n The volume of weaponry produced
  - n The ability to deploy and use the weaponry successfully (success being defined in function of the goals)
  - n The sophistication of such deployment and use

# Rajneesh cult (USA – 1984)

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- n Goal: influence local elections
- n Use of salmonella (food poisoning)
  - n Over 750 people incapacitated
  - n Solution poured over food in salad bars
- n Outcome: failure
  - n test run
  - n attack on eve of elections did not take place
  - n Cult basically dissolved



# Aum Shinrikyo (Japan – 1990-95)

- n **Goal: Take over government of Japan**
- n **Development of wide array of weaponry + large military force**
  - n CB agents intended to destabilise society (provocation of Armageddon)
  - n Major CB research, development and production programme
  - n Sarin attacks in Matsumoto (1994) and Tokyo (1995); assassination attempts with VX
    - n Matsumoto: 7 fatalities; about 600 injured
    - n Tokyo: 13 fatalities; 5500 other casualties (a large majority psychological distress)
- n **BW programme**
  - n Attempted cultivation of *clostridium botulinum* and *anthrax* bacteria
  - n Attempt to buy *Q fever* from Japanese culture collection
  - n Attempt to obtain *Ebola* virus from Zaire during natural outbreak there
  
  - n Attempt to release anthrax in Tokyo in June 1993
  - n No reported casualties
- n **Outcome: failure**
  - n Strategic goals never attained
  - n Both sarin attacks were tactical operations to thwart threats against cult
  - n Biological weapon programme never produced a usable agent, even on research level
  - n Cult dismantled; leaders arrested and tried

# Mail-delivered anthrax spores (USA – 2001)

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- n Perpetrator still unknown; agent from US bio-defence laboratory
  - n Bruce Ivins: A convenient end to an inconvenient truth?
- n Goal: unknown, speculation about boost to US bio-defence programmes in wake of Al Qaeda strikes against USA
  - n Targets were members of Congress (Democrats) → made opposition to spending increases unlikely
  - n Targets were mass media outlets → maximise publicity
- n Use of small amount of anthrax spores (sophisticated preparation)
  - n 22 casualties, including 5 fatalities
- n Outcome:
  - n Targeted members of media and Congress escaped unhurt
  - n Mass hysteria in the USA
  - n Anthrax spores ended up in mail in Europe and Asia

# Al Qaeda / jihadist terrorism

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- n Limited interest in CB agents
  - n No operational guidance
  - n Greatest interest related to cyanide compounds and toxins (ricin); concoction of pesticides + skin penetrating agent claimed to be nerve agent
  - n Primitive laboratory and testing facilities in Afghanistan prior to US invasion
  - n People with potential skills & knowledge perform other tasks; no dedicated recruitment
  - n Investment by al Qaeda central in nerve agent project: US\$ 2-4,000
- n Discussion of CB terrorism
  - n Deterrence of West (includes nuclear devices) in public statements by senior al Qaeda figures (prompted by journalists)
  - n In context of indiscriminate casualties among Muslims
  - n Otherwise mostly on jihadist websites, but very limited and often based on extremely narrow base of original texts (e.g., Poisoner's handbook)
- n Incidents
  - n Opportunistic attacks (e.g., chlorine attacks in Iraq)
  - n Sympathisers with no formal links to al Qaeda or its affiliates → ricin; toxins
  - n Often misreported (e.g., 1993 New York bombing; 2004 Amman bomb plot)

# Alternative use of CB agents

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- n Against humans
  - n Potential for mass casualties exists, but not necessarily most likely scenario as agents are difficult to acquire
  - n Incapacitation
    - n Wider range of agents available
    - n Easier to collect from nature and cultivate
    - n Delivery uncomplicated
    - n Lower requirements for skills and functional specialisation
- n Against animals and plants
  - n Economic impact
  - n Agents easier to acquire; less of a risk to perpetrator
  - n Easy to deploy
    - n Many vulnerabilities in the food chain
- n Economic and societal disruption
  - n Goal is to disrupt functioning of utilities, commercial enterprises, public agencies
  - n Wider range of biological agents available
    - n Several can be commercially obtained
  - n Exploitation of fear and lack of adequate preparations
  - n Effectiveness of hoaxes

# General conclusions

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- n Possibility of a major terrorist strike with CBW cannot be excluded
- n However,
  - n The acquisition process is complex for the potentially most destructive agents
  - n The armament process is not inevitable
    - n Promoting factors
    - n Counter-acting factors
    - n Paradox: some promoting factors may actually contribute to the failure of the CBW acquisition process (impact of feedback loops)
- n The 'lesser' agents in the armament dynamic
  - n Economic or environmental terrorism, assassination, and other more (time-)limited goals
  - n They come within the capabilities of more groups or individuals
    - n Lower demands on operational guidance
    - n Acquisition also less demanding
    - n Lower need for functional specialisation
  - n Less destructive
  - n Impact of exposure to low quality agents

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