

# **A Century of Chemical Weapons**

*Why disarmament prevailed over armament*

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*A Century of Weapons of Mass Destruction: Enough!*

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# 22 April 1915: Confluence of several trends – 1

- **Emergence of chemistry as a science**
  - End 18th century; rapid development in 19th century
  - Development of new analytical and production methods
  - Toxic chemicals are manufactured; not derived from nature
- **Discovery and synthesis of new chemicals**
  - ***Chlorine***: first preparation in 1774
  - ***Phosgene***: first synthesised in 1811
  - ***Mustard gas***: compound and its effects first described in 1860

# 22 April 1915: Confluence of several trends – 2

- **Industrialisation**

- Second industrial revolution in the 2nd half of the 19th century
- Commercial application of chemistry
- Integration of science and large-scale production based on economic rationale

- **Education**

- Permeation of science and technology throughout society
- Impact on problem identification, analysis, and application of technical solutions in all sectors of society

- **1<sup>st</sup> World War**

- Industrialisation of warfare (total war)
- Forced integration of science, industry and military art

# WW1: A 3-dimensional war

- **Horizontal extension**

- Across land and across the seas
- Enormous extension of the battlefield
  - Length-wise: from Nieuwpoort on the North Sea to the Swiss border near Basel
  - Depth-wise: trench systems, logistics, supply routes from different continents
- The home front:
  - population's morale
  - mobilisation of all human and material resources in support of the war effort

- **Vertical extension**

- Aeroplanes, balloons and Zeppelins; submarines and mines
- Trenches and dugouts
- Offensive and defensive tunnel operations under the trenches

- **Gas**

- Heavier than air
- Denied the soldier safety offered by trenches and underground shelters
- Also a typical product of the 1<sup>st</sup> World War

# Attitudes among soldiers & civilians along the Western Front

- Gas resented because of stealthiness and inevitability
- However, experienced as one nuisance among many
  - Weather & mud
  - Sleep deprivation
  - Disease & hunger
  - Snipers & artillery harassment
  - ...
- Last war year: gas was omnipresent all the time
  - Gas masks worn for 48 hours and longer in front trenches
  - Extreme gas discipline developed over years
  - All frontline soldiers poisoned to some degree

# Public opposition to CW

- Emerged first in societies far removed from frontlines
  - Canada & USA:
    - Coughing & wheezing among repatriated casualties and veterans most tangible evidence of war horrors
    - Moral opposition led to political and diplomatic action (e.g., 1922 Washington Submarine & Gas Treaty)
  - Netherlands:
    - Moral revulsion against the slaughter in the trenches
    - Many Belgians escaped to the Netherlands & fed into local war perceptions
    - War opposition in the Netherlands eventually gave rise to *Women's International League for Peace and Freedom* (1919) and *War Resisters International* (1921)
- Same attitudes inside and outside Syria today
  - Helps to explain why there is limited ownership of CW disarmament among warring factions inside Syria

# Towards the Geneva Protocol

- **WW1 & aftermath**
  - Proliferation of CW was preferred policy option
    - Sale to countries without production capacity in WW1 (e.g., France & GB to Belgium and USA)
  - Threat perceptions in Europe
    - Disproportionate accumulation of CW capacity by one state rather than number of countries with CW
    - Assistance with 2<sup>nd</sup>-tier power CW programmes
      - E.g., France to Belgium in 1920s & 1930s
- **League of Nations**
  - 1925: Conference for the Supervision of the International Trade in Arms and Ammunition and in Implements of War
    - US proposal to *'prohibit the export from their territories of any such asphyxiating, poisonous or other gases, and all analogous liquids, intended or designed for use in connection with operations of war'*
    - Practical problem: several *'asphyxiating, poisonous or other gases'* had widespread legitimate industrial & commercial application
  - Could not be resolved → Proposal for protocol **banning use in war**
    - Moral imperative as issue of gas had been raised in diplomatic forum
    - Drew on language from 1899 Hague Declaration (IV, 2) & 1922 Washington Treaty
    - 'Protocol' was **agreed in anticipation of comprehensive disarmament treaty** to be negotiated by League of Nations

# Discovery of 'dual use'

- **French immediate reaction when welcoming US proposal:**
  - *Need “to define, if possible, the characteristics of gases and chemicals which cannot be utilised in war, or of those which can be utilised both for warlike and non-warlike purposes.”*
- **Top scientists set to task, but Military Technical Committee reported back:**
  - *‘Such substances are not by any means rare; the majority are common materials ordinarily manufactured and employed in large quantities for peace-time requirements, so that there is very little difference between the manufacture of pharmaceutical products and that of injurious substances used in war.’*
- **Fear that trade ban would place non-producing countries at major security disadvantage**
  - Conclusion was consonant with contemporary threat perceptions in Europe
  - Contemporary proliferation policies eliminated **discrimination** based on a state’s level of technological development



# 3 critical issues to resolve

- **Late 1920s: to prevent chemical warfare, peacetime preparations had to be prohibited**
  - Diplomats had to tackle the 'dual-use' problem head on
  - In May 1932: report by the Special Commission on CBW offered solutions → contained the foundations of what is now known as the

## ***General Purpose Criterion***

- **Definition of 'chemical weapon'**
  - **Rejection** of circumscription based on 'toxicity' or 'lethality'
  - **Rejection** of circumscription based on chemical composition
  - Need to **capture** all toxic chemicals (including 'tear gas'), present and future
    - Focus on physiological impact on living organisms
    - Emphasis on 'all' toxic chemicals → **no exceptions to definition**
- **Ban on the application of ('all') toxic chemicals became *default* position**
  - A limited number of **purposes** were identified to be legitimate applications, and therefore explicitly 'exempted' from the general prohibition
- **Defence and protection against CW was to be authorised**
  - CW development, production and stockpiling for '**deterrence**' not

# British draft convention (16.03.1933)

- **Article 52**

- In order to enforce the aforesaid general prohibition it shall in particular be prohibited:

- (1) To manufacture, import, export or be in possession of appliances or substances *exclusively suited* to chemical or incendiary warfare.

The quantities of chemical substances necessary for *protective experiments, therapeutic research and laboratory work shall be excepted*. The High Contracting Parties shall inform the Permanent Disarmament Commission of the quantities of the said substances necessary for their protective experiments.

The manufacture of and trade in these substances may not be undertaken without government authorization.

- (2) To manufacture, import, export or be in possession of appliances or substances suitable for *both peaceful and military purposes* with intent to use them in violation of the prohibition contained in Article 48.
- (3) To instruct or train armed forces in the use of chemical, incendiary or bacterial weapons and means of warfare, or to permit any instruction or training *for such purposes* within their jurisdiction.

# Lasting impact of the Geneva Protocol

- Laid the foundation for **disarmament** (rather than arms control & non-proliferation)
  - 'No use' pushed CW to the margins of military doctrine
  - Principles apply to all states parties, without discrimination
  - Technology was not forgotten, but how to use it in war gradually was
    - Gas discipline levels of WW1 were never achieved again
    - No commander could afford gas attrition rates of WW1 ever again
- Nuclear weapon **disarmament**: possible impact of a **General Purpose Criterion**
  - E.g., all enrichment activities would be prohibited, except for non-prohibited purposes → impact on **nature** of verification activities
  - No haggling over number of centrifuges, given the default condition of prohibition
  - No need to differentiate between peaceful applications and possible weapon dimensions
  - Same basic solutions would apply to all countries, incl. nuclear-weapon states, nuclear-armed states, and threshold states (non-discrimination principle)
  - **BUT**: ban on 'use' is the precondition for the GPC to work → delegitimises weapon
- 90<sup>th</sup> anniversary Geneva Protocol on 25 June 2015



# THE TRENCH

**Recalling** where science, industry and military art converged  
**Challenging** entrenched positions

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