Primitives, religious isolates, twins, and the survivors of the atomic bombs

Special populations in scientific research

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Part 2

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(配布したAbstractをご参照下さい)

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What makes a group suitable for scientific study?(研究するべきグループとは？）

- For geneticists, certain groups have been important
- Inbred
- Isolated by religion
- Isolated by geography
- More likely for recessive genes to be “visible” in the phenotype
- Subject to unique technological experience: The bombings （原爆投下という特別な体験をもつ）

Photos(eliminated) of five isolated groups

- **Victor McKusick and the Pennsylvania Amish**
  （宗教的に孤立 しているグループ）
- **From the Twins UK** （双子のグループ）
- **Sarah Tishkoff of Penn**
  （現代史から孤立しているグループ）
- **Baruch Blumberg found Hepatitis B**
  （オーストラリヤのアボリジニ）
- **2010 Francis Underhill**
  Macy Hibakusha Initiative（**New York** の被爆者達）

Hibakusha（被爆者）

- Atomic Bomb Survivors as a unique research population (被爆者達は特別な研究対象人口）
- For heredity（遺伝的研究のため）
- For all forms of radiation risk（あらゆる放射能の危険性を知るため）
- Crucial to setting radiation exposure limits around the world (国際的放射被爆、限界を決めるため）
- The bombings produced a study population highly relevant to the Cold War（原爆投下は冷戦に高度に適応した研究対象人口を生み出した）

Origins of the Atomic Bomb Casualty Commission(ABCCの起源）

- Why study the survivors?（被爆者を研究する理由？）
- What could such research reveal?（何を明らかにする研究？）
- How was the study organized?（どのように研究が組織かされた？）
- Funding, politics, war（発見，政治，戦争）
- Uncertainty and the fear of genetic effects（遺伝的影響についての未知と不安）

1950 census（国勢調査）

- One of the most important triumphs for the developing ABCC was the inclusion of a survey about survivor status in the 1950 Japanese census.
- Having been exposed to the bombs--and therefore qualifying as "hibakusha," a social category by no means desirable--was not necessarily something people wanted to reveal.
- Employment and social discrimination against survivors was widespread. They were believed to be unlikely to be good workers (sickly, at risk for cancer and other conditions) and unlikely to be good marital partners (at risk for genetic effects in their children).
- The numbers of self-identified survivors rose very gradually in the post-war years, and the data from the 1950 census facilitated the creation of a core population of survivors around whom ABCC research could be structured

被爆者達の調査状況

- 120,000 in the Life Span Study Cohort
- A selected 20,000 in the Adult Health Study (drawn from the Life Span Cohort)
- Up to 76,000 children of atomic bomb survivors (the F1)
- 3,600 who were in-utero survivors

Reconstructing a critical moment

- T65D (tentative 1965 dose) dosimetry calculation in 1965, and with later reports with abbreviated titles for "dosimetry system" the DS86, and DS02 (Dosimetry System reports).
- The types and amounts of radiation released by the bombs at the moment of detonation--the critical moment of exposure, in comparison with which all other exposures were trivial--were not stable, measured, known facts about the world, but frequently recalculated and estimated assessments, grounded in technical uncertainties.

John Auxier, *Ichiban*

- Auxier and his group calculated how much and what types of radiation each survivor had been exposed to, based on interviews with over 60,000 survivors, conducted by teams of Japanese interviewers with U.S. observers, over a period of ten years.
- Ichiban replayed the bombings, in the construction of artificial or surrogate Japanese cities in Nevada, and in detailed oral histories which produced a tapestry of physical, medical and social experience, or a tapestry of traumatic memory.
- Database documenting the exact locations of 60,000 people at moment of detonation.
- Auxier recalled his astonishment at the survivors' detailed memories of the moment.

Traumatic memory（最初の女性体験者をインタヴィウ）

“We interviewed her and it was precisely, exactly like the first woman had described it. She knew where the woman who was sweeping [was], where her broom was, she knew where her hand was. It was scary it was so detailed. It was so burned in their memory so much. What they did five minutes later they could not remember. But that instant they remembered, so we had confidence then that mostly people remembered.”

Auxier, 2012 oral history

Financial pressures（財政問題）

- From 1963 to 1973 the costs of the ABCC more than doubled, even though the staff declined by 300 people.
- Japan was contributing significantly less to the project than the United States.
- In 1972 the US contribution was 1.25 billion yen, and the Japanese 74 million.
- AEC was trying to leverage its cooperative work with the Japanese nuclear power program--specifically a deal that involved the sale by the US to Japan of $320 million worth of fuel for new nuclear power stations--to get commitments for Japanese support for the ABCC..

How and why some groups became important for scientists interested in heredity.（相続性や遺伝に関心のある科学者にとつて、いかに，なぜ，これらのグループが重要か

- Cold War context （冷戦関連）
- “primitives” and “isolates” （“原始的”と“孤立的”なグループ)
- “natural experiments” (twins) （“自然現象”双子達）
- Exposed ones（被爆者達）