



Archive project from the experience of earthquake and nuclear disaster

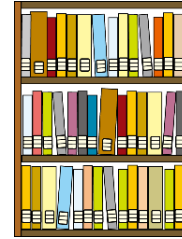
- Can we learn from the negative experience? -

Arifumi HASEGAWA

Department of Radiation Disaster Medicine,
Radiation Disaster Medical Center, Emergency and Critical Care Center
Fukushima Medical University

Key words

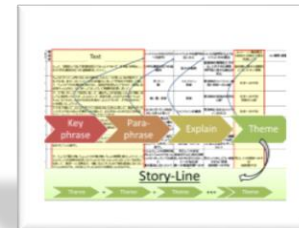
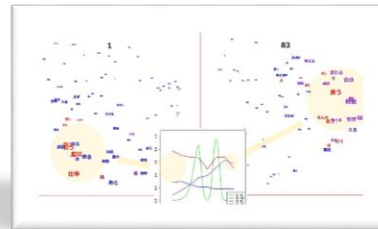
- Archives



- Narrative story



- Output style



- Semi-custom communication



Reconstruction



Reconstruction

“change”

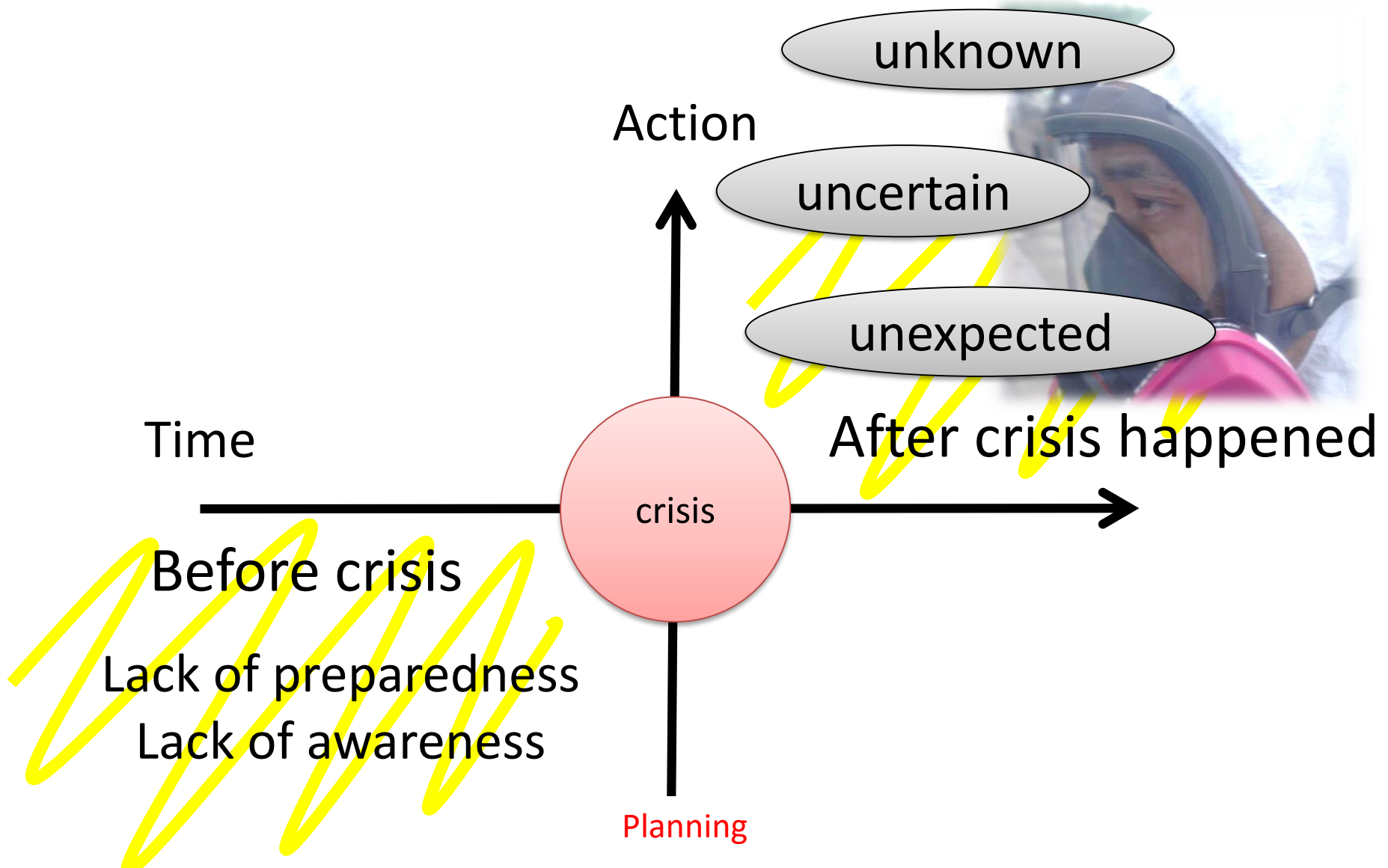


Reconstruction

“change”



Experiences at Fukushima



Experiences at Fukushima

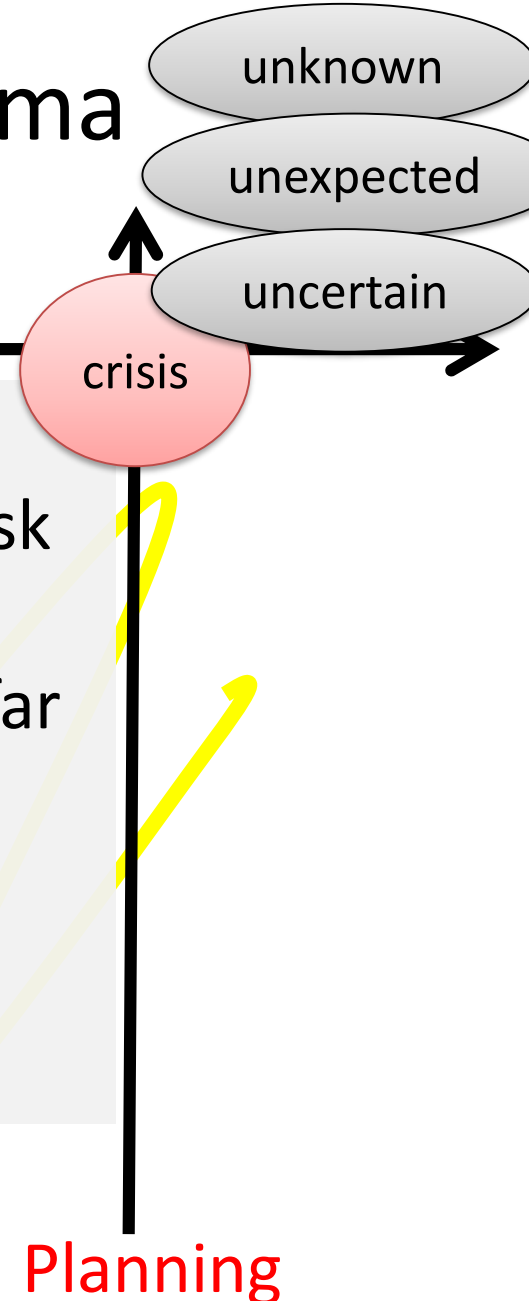
What can we do before next crisis?

time

- Maintain risk awareness
- Maximum precaution for predictable risk (i.e. plural precautions and risks)
- Prior reduction of uncertain factors as far as possible

Education

- Increase learning, knowledge and skill
- Learn from the experience and history

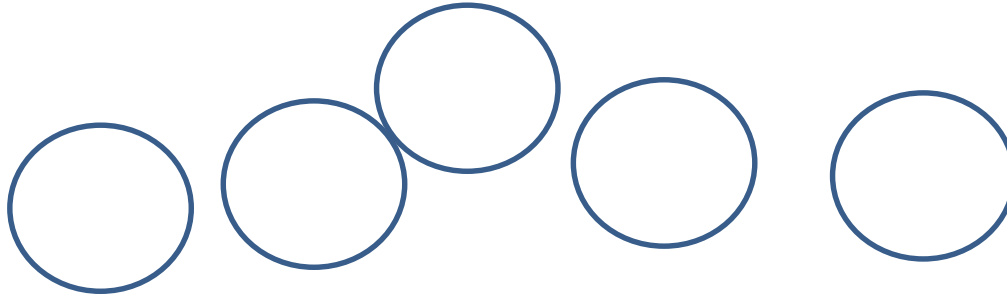


Why “archives”?

S21 Tuol Sleng; Genocide Museum, Cambodia

*“How to hand down the negative
history to my son?”*

Why “narrative stories”?



- Actual reaction of the human being in critical situation
- Two dimension; positive and negative, public and personal
- Relatively easy to pass a story down from next generation
 - Easy to forget
 - Unable to study by RCT

Archives

Narrative stories

Vocation for us to record and analyze them

Why “custom-made” communication?

- Diversity
- Heterogeneity
- Various sense of value, perception, policy, attitude

Must be characterized in each background group

- Anxiety characteristics vary with social background
- makes it complicated to deal with radiation anxieties



Overview of the archives project

Focus Group Interview
narrative stories



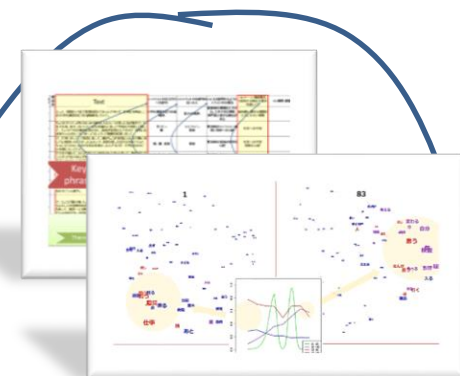
Job, Insurance, Health, Children, etc.



Packages
communication contents

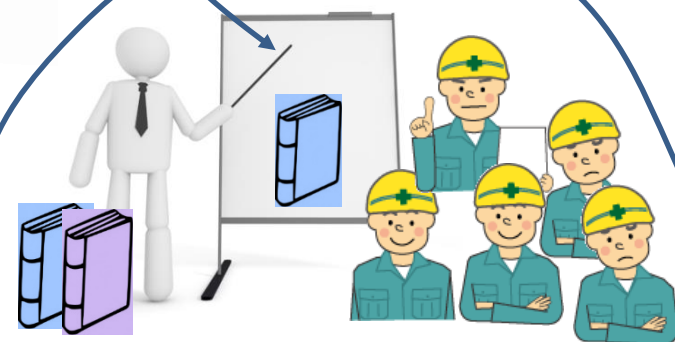
Archives

including potential factors
associated with radiation
anxieties in groups of
various social backgrounds



Output style

Semi-Custom
Communication



Materials and Methods

Focus Group Interview (FGI)

- informed consent
- focus group interviews (FGIs) for workers, residents, and evacuees living in Fukushima,
- in groups of 4-6 persons
- in each group regarding to the same as background
- give two topics related to the triple disaster of 3.11:
 - a) “lessons learned (at work/home), in light of your position in society”
 - b) “your health issues.”



KH Coder

- Quantitative analysis
- to categorize and extract the frequent words in text string.

Step for Coding and Theorization (SCAT)

- Qualitative analysis
- create story lines from FGIs.
- Four-step coding based on story lines.
- Key phrase, Paraphrase, Concept, Theme

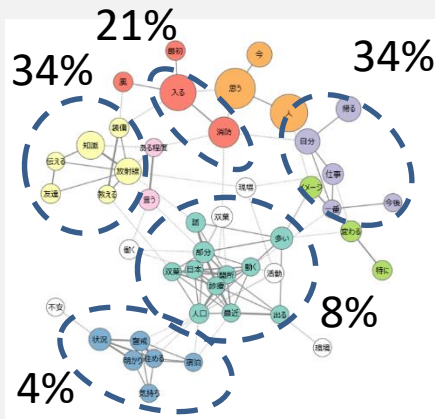
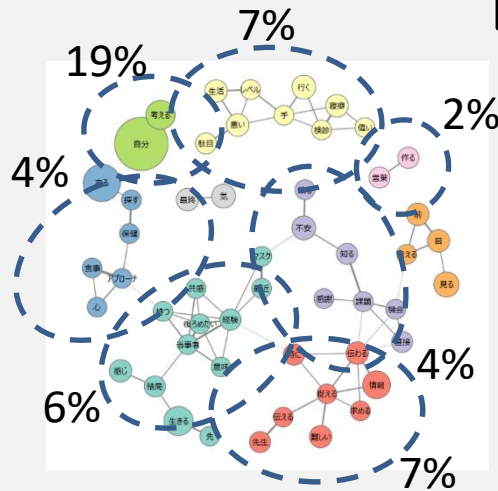
Focus Group Interview (FGI)

Synergy effect to trigger the response each other
Comfort effect to answer in the similar background



- Number of interviewees : 137 (male 87, female 50)
- Background of the interviewees
 - Evacuees
 - Firefighters
 - University public communication officers
 - Medical staff who deal with hospital evacuation
 - Decontamination workers

KH Coder



Question

“Triple disaster of 3.11 related to your lessons learned”

● Government personnel

This group is interested in the correct knowledge about radiation and how to convey information. They feel conflicted in the current situation because correct information has not been transmitted to evacuees.

Prevailing factor is
“offering information to promote media literacy”.

● Firefighters

This group is interested in returning residents.

Prevailing factor is
“protecting the lives of returnees from disaster as their mission.”

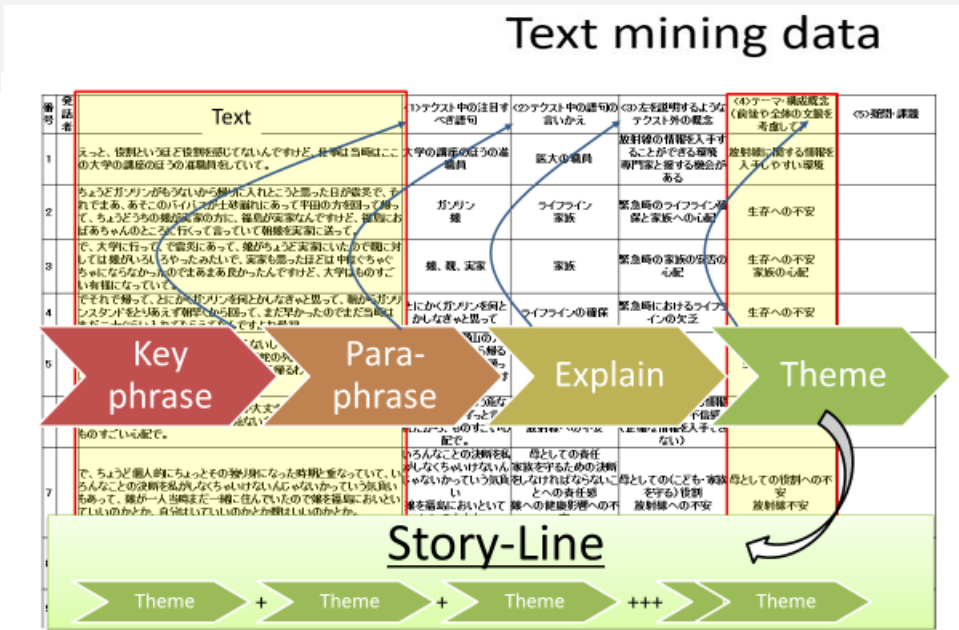
Seeds for semi-custom communication

Step for Coding and Theorization (SCAT)

- **Example; comment from the University public communication officers during the FGI.**

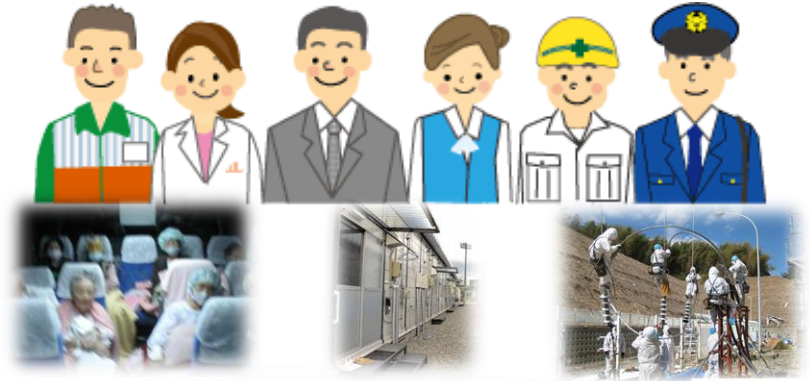
“Despite being in a situation where she was affiliated with public institutions and had easy access to information on radiation, she felt strongly concerned about her family’s disorientation and radiation anxiety during the initially confusing period.

Anxiety in this context arose about the reliability of information, the divergence between revealed information and reality, the loss of confidence in government authorities, and survival in an ambiguous situation. Moreover, she reacted anxiously and vigilantly to radiation issues from the perspective of being a mother."

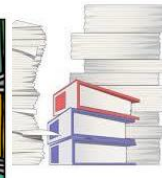
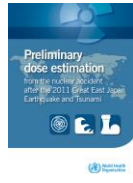
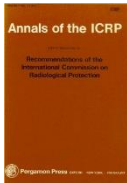


Pick up the minor but important voices

Why “output style” of the archives?



Archives



Evidence based study

Narrative based study

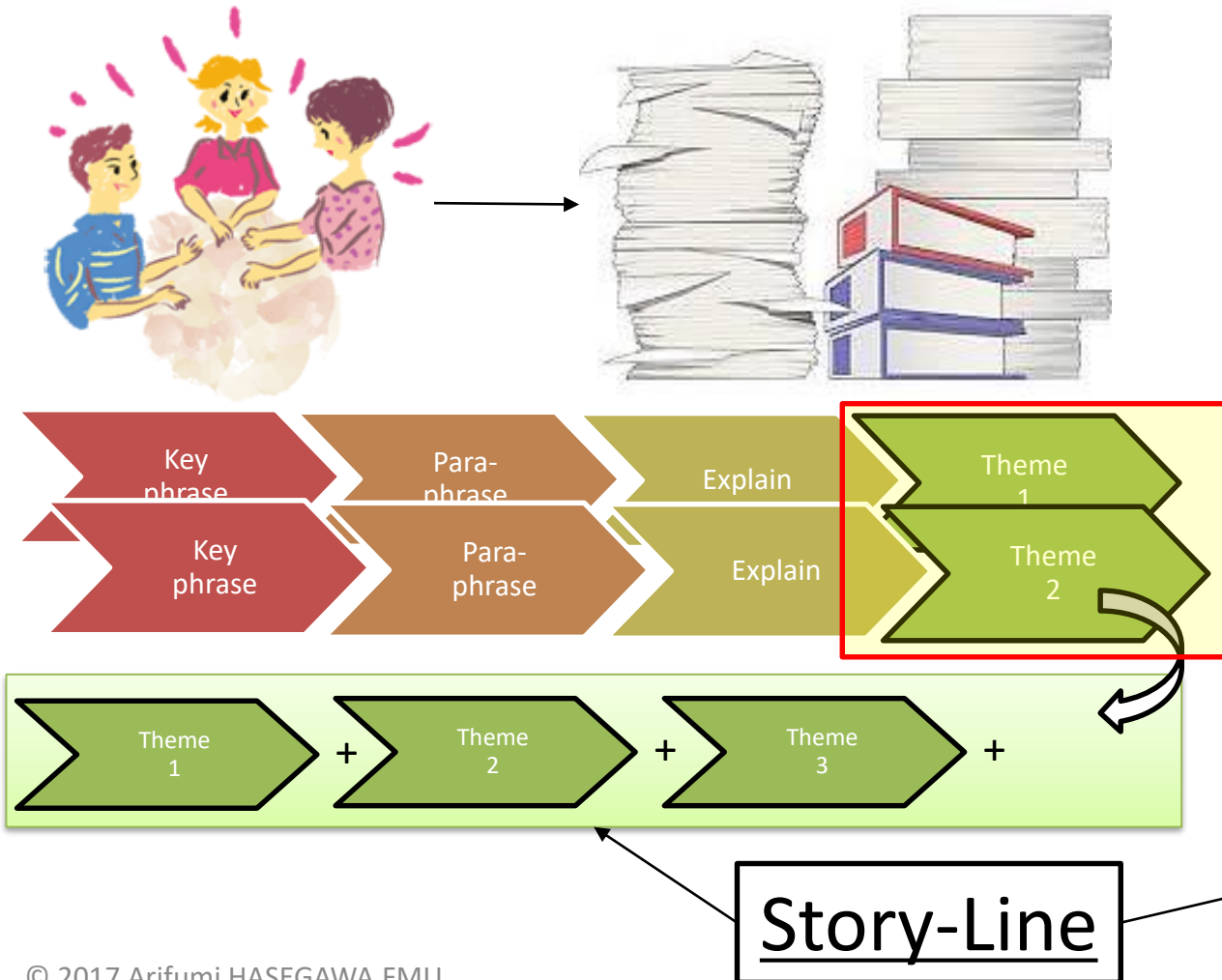


attractive?
efficient?
easy access?
interesting?



① Storylines summary by qualitative analysis

Text mining data

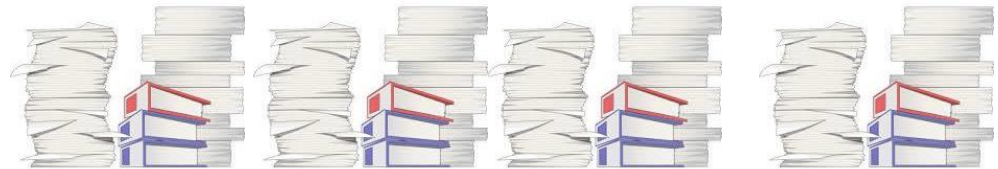
[illegible]

Display methods of the archives

- Learn from Hiroshima and Nagasaki

広島平和記念資料館 平和データベース

Hiroshima Peace Memorial Museum Peace Database



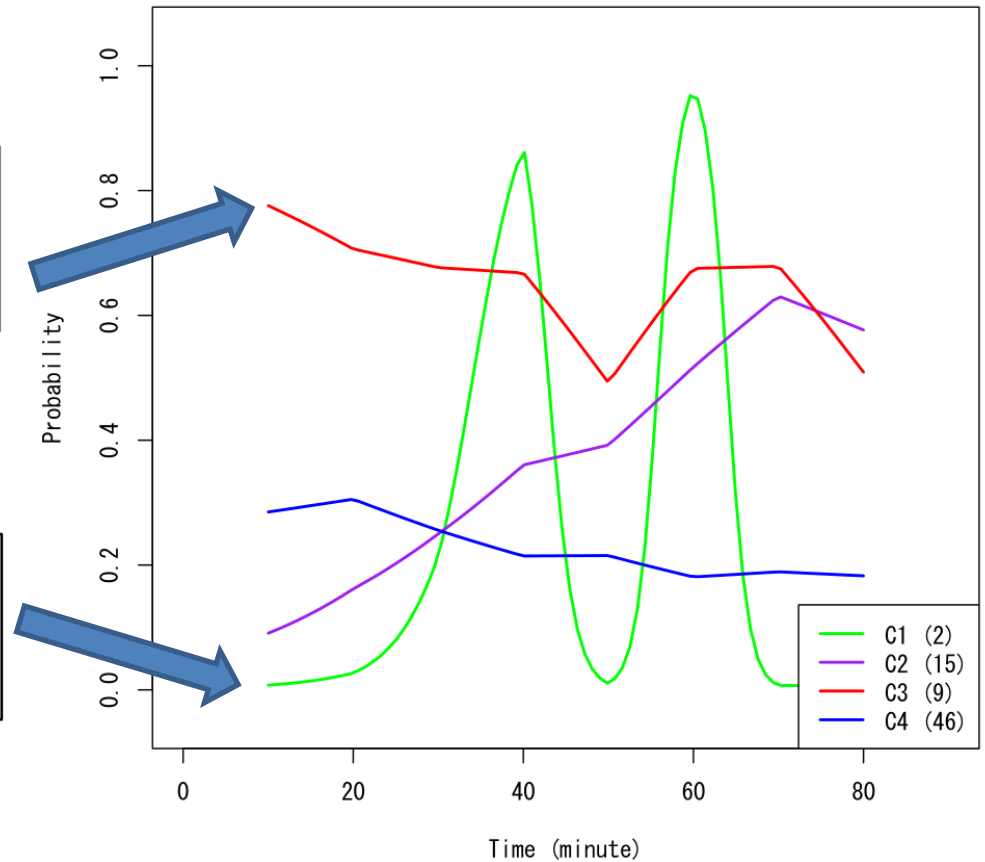
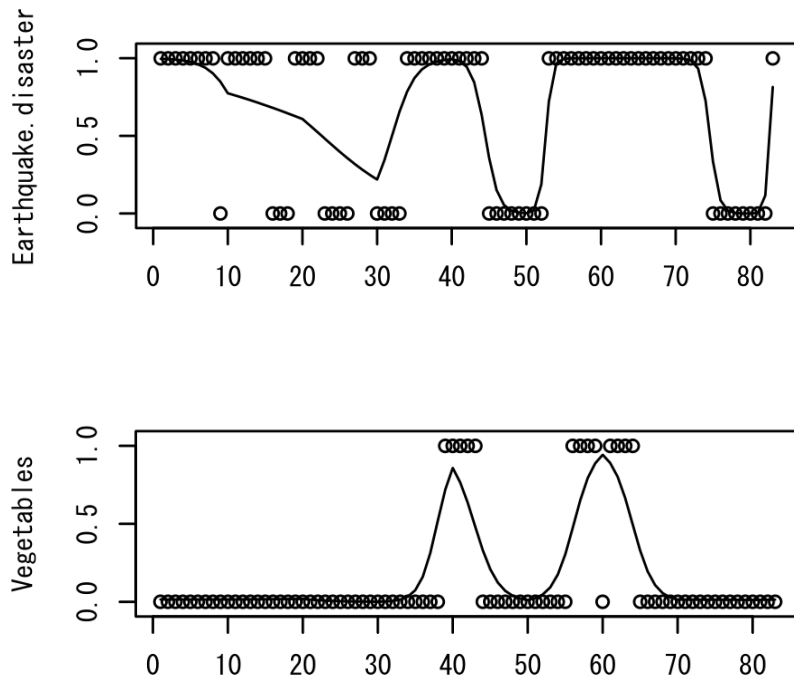
 データベース内を フリーワードで検索 <input type="text"/> 検索 ・検索方法	 被爆資料 被爆した衣服や生活用品、 遺品など	 写真 被爆後広島で撮影された 写真など	 原爆の絵 被爆者が自身の体験を描いた 原爆の絵など
平和データベースとは？ 広島平和記念資料館が管理する原爆、 平和関連の資料をデータベース化した ものです。 	 本【単行本】 所蔵・管理する単行本の情報	 本【雑誌】 所蔵・管理する雑誌の情報	 美術品 平和を願って制作された美術品
	 音楽・音声 ヒロシマに関連した音楽・ 音声情報	 動画 原爆被害の記録映像や映像作品	 被爆者 証言ビデオ 広島で被爆した約300人の証言

<http://www.pcf.city.hiroshima.jp/database/>

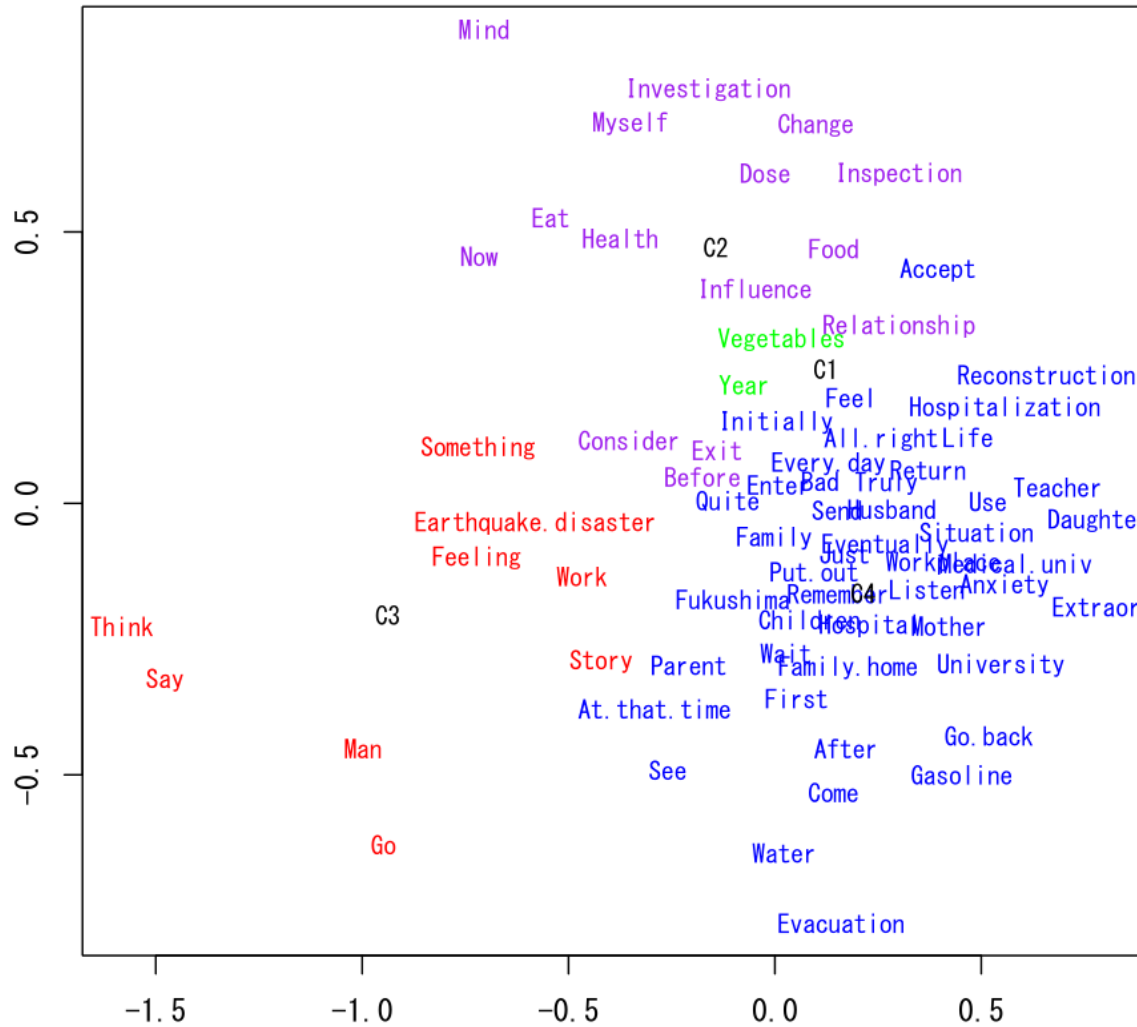
Binary Text data for analysis

time	Earthquake-disaster	Feeling	Myself	Dose	Hospital	First	Family-home	Situation	Vegetables
1	1	0	0	0	1	1	0	0	0
2	1	0	0	0	1	1	0	0	0
3	1	0	0	0	1	0	1	0	0
4	1	0	0	0	0	0	1	1	0
5	1	0	0	0	0	0	1	1	0
6	1	1	0	0	0	0	0	1	0
7	1	1	0	0	0	0	0	1	0
8	1	1	0	0	0	0	0	1	0
9	0	1	0	0	1	0	0	0	0
10	1	1	0	0	1	1	0	0	0
11	1	1	0	0	1	1	0	0	0
12	1	1	0	0	1	1	0	0	0
13	1	0	0	0	0	1	1	0	0
14	1	1	1	0	0	1	1	0	0
15	1	1	1	0	0	1	1	0	0
16	0	1	1	0	0	1	0	0	0
17	0	1	1	0	0	1	0	0	0
18	0	1	1	1	0	0	0	0	0
19	1	1	0	1	0	1	0	0	0
20	1	1	0	1	0	1	0	0	0

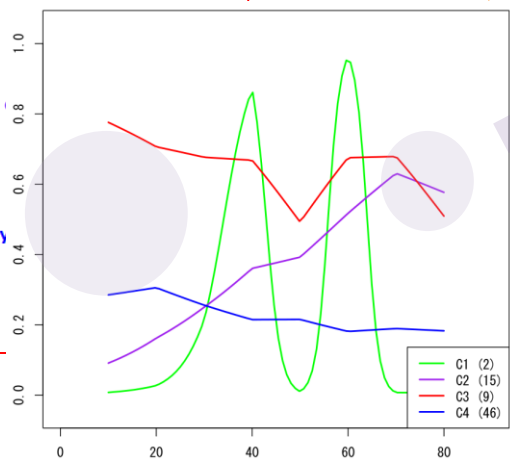
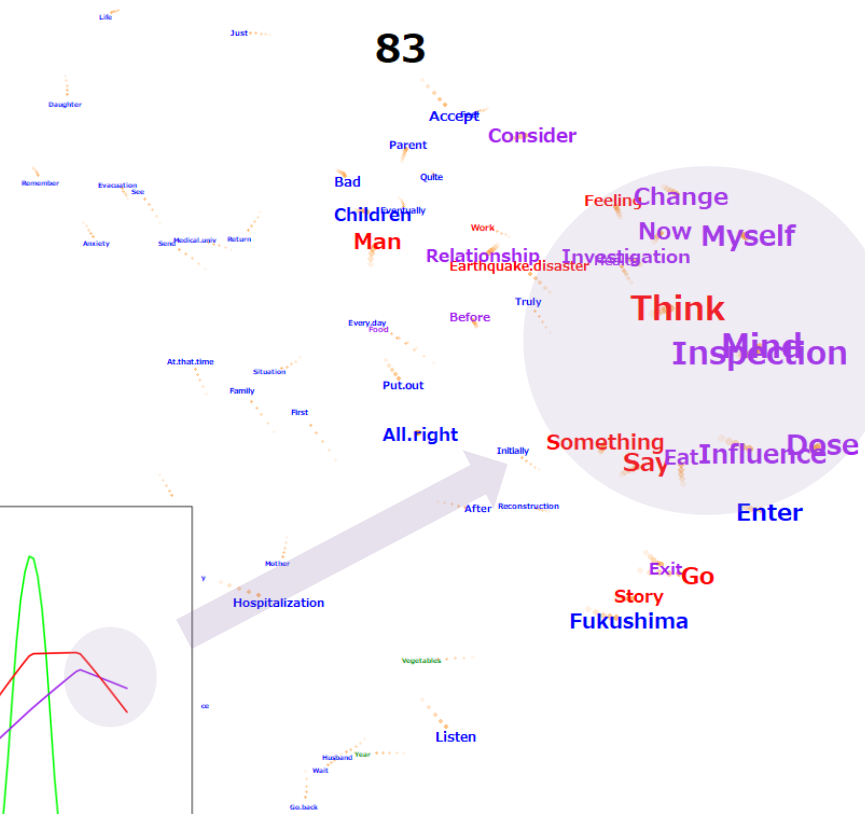
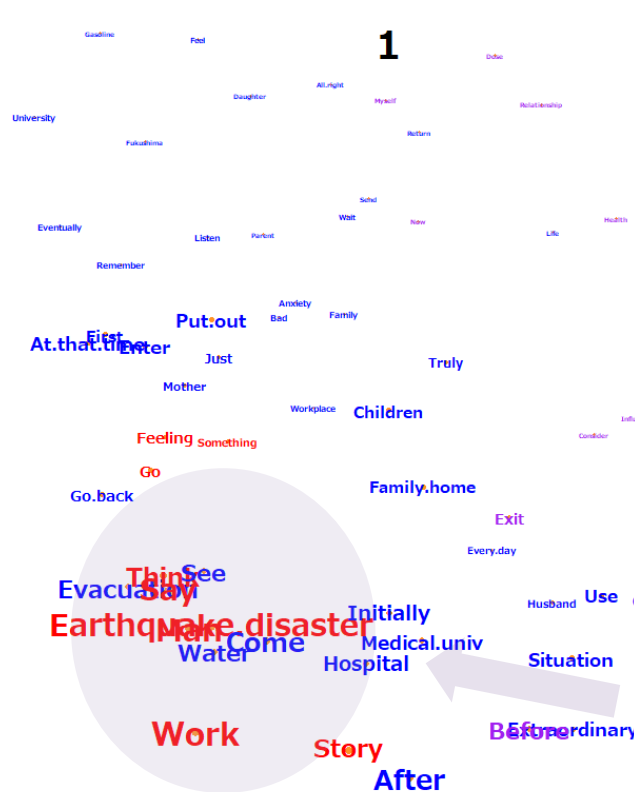
Keywords time-trends and the Classification



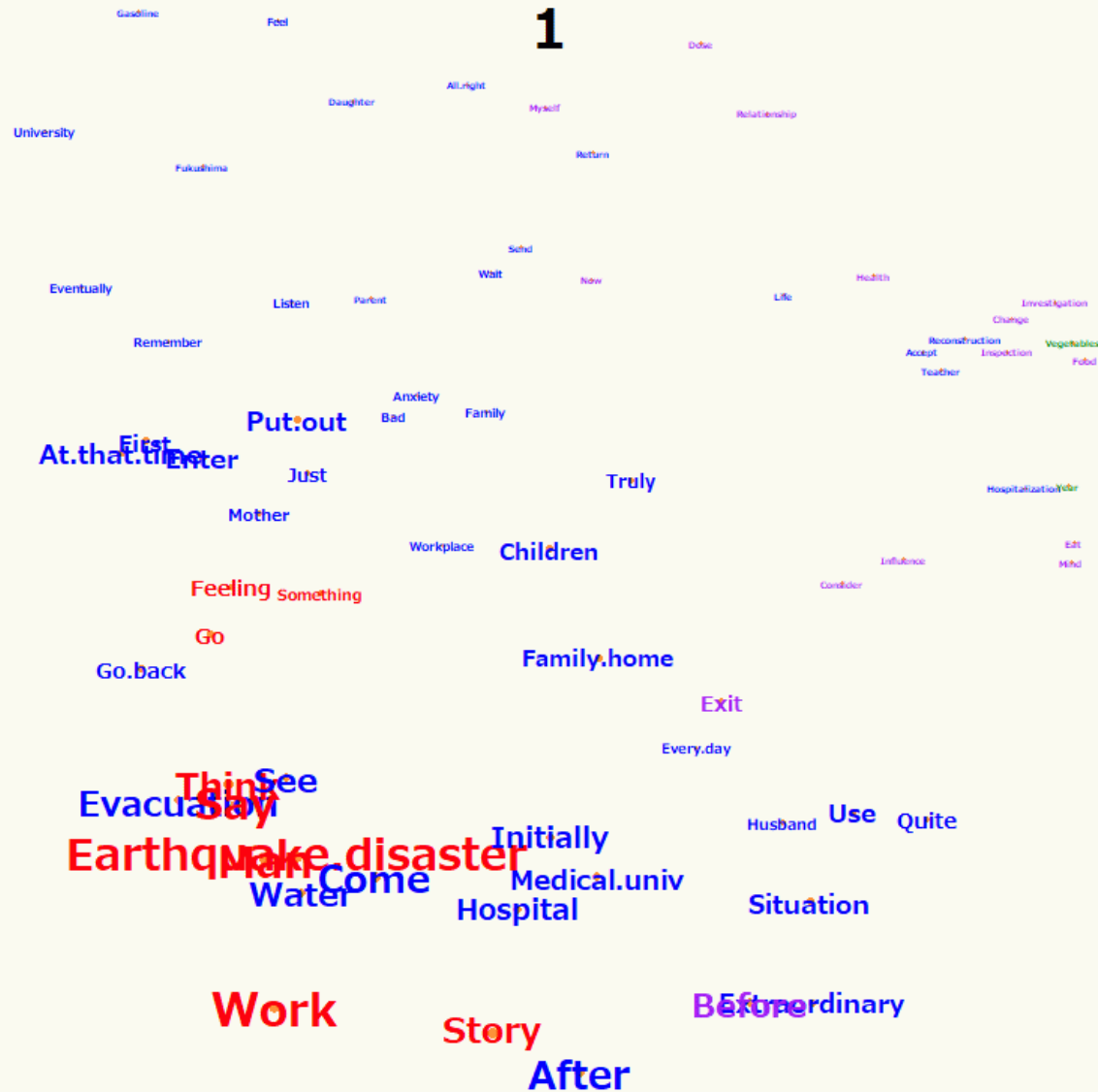
Categorizing keywords by class



Programming by R-language for animation

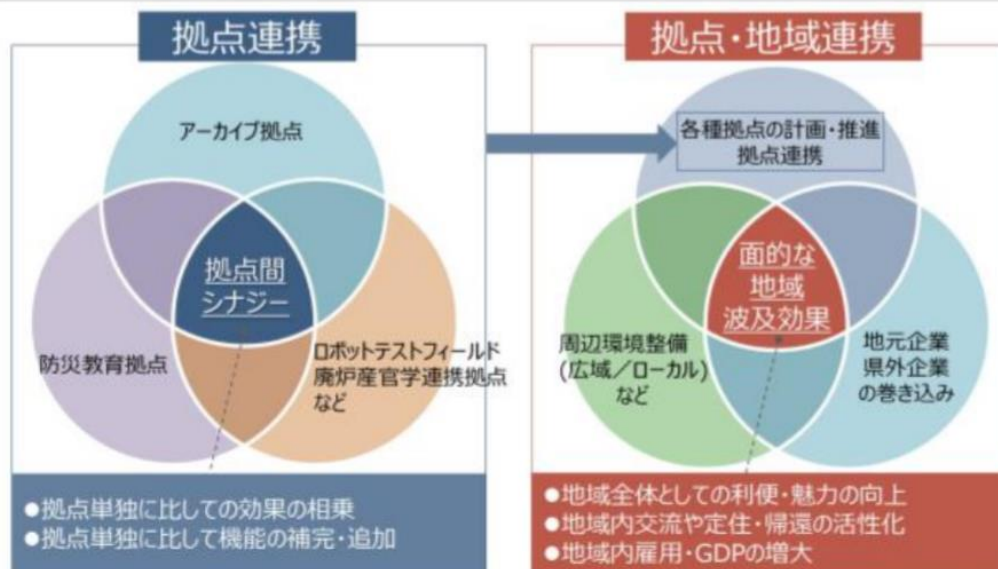


② Visualizing FGLs by animation



Archives project in Fukushima prefecture

拠点・地域連携のイメージ



東日本大震災・原子力災害アーカイブ拠点施設

基本構想



平成29年3月

福島県

建設予定地の位置図



①福島県全域

双葉町は、福島県の浜通り地方に位置しており、福島イノベーション・コースト構想の一翼を担う地域である。



②双葉町全域

双葉町の南東は、福島第一原子力発電所が立地している。原子力発電所事故の影響で、帰還困難区域に指定されたエリアもある一方、北東部は避難指示解除準備区域に指定され、復興に向けたまちづくり計画が進められている。



③双葉町復興まちづくり長期ビジョン

双葉町の復興まちづくり長期ビジョンの中で、再開を予定する双葉駅や、双葉インターチェンジ（平成31年度完成予定）とを結ぶ復興シンボル軸の上に、中野地区はある。中野地区の東側（海側）には、復興折念公園の予定地となっている。



④中野地区復興産業拠点

避難指示解除準備区域であり、かつ、津波被災リスクが少ない中野地区は、町の復興のさきがけとなる「復興産業拠点」として整備される。また、アーカイブ拠点施設の建設予定地には、町の産業交流センター（仮称）の建設も予定されている。建設予定地の東側は、道路を挟み、復興折念公園ゾーンとなっている。

Discussion

- The potential factors of radiation anxiety in each social background may appear through our study.
- It is necessary to involve more and diverse investigators to improve objectivity.
- We are planning to conduct more FGIs and continue the analyses in order to establish semi-custom risk communication packages.

*“not only for providing the complete wellbeing”
“but also support people getting ability to adapt and self manage in the face of social, physical, and emotional challenges during their narrative life stories”*

How should we define health?

The WHO definition of health as complete wellbeing is no longer fit for purpose given the rise of chronic disease. **Machteld Huber and colleagues** propose changing the emphasis towards the ability to adapt and self manage in the face of social, physical, and emotional challenges

Machteld Huber *senior researcher*¹, J André Knottnerus *president, Scientific Council for Government Policy*², Lawrence Green *editor in chief, Oxford Bibliographies Online—public health*³, Henriëtte van der Horst *head*⁴, Alejandro R Jadad *professor*⁵, Daan Kromhout *vice president, Health Council of the Netherlands*⁶, Brian Leonard *professor*⁷, Kate Lorig *professor*⁸, Maria Isabel Loureiro *coordinator for health promotion and protection*⁹, Jos W M van der Meer *professor*¹⁰, Paul Schnabel *director*¹¹, Richard Smith *director*¹², Chris van Weel *head*¹³, Henk Smid *director*¹⁴

Conclusion

Archiving the lessons learned

- from the negative experiences(Science),
- including narrative stories(Society),
- toward the semi-custom communication(Society),
- by effective output(Technology),

will be one of the future agenda of the STS activities.

Financial disclosure

- This work was supported by Research on the Health Effects of Radiation organized by Ministry of the Environment, Japan.

Acknowledgement

- “Study Group of the Health Effects of Radiation organized by Ministry of the Environment, Japan” and “FMU team”.
- Kenichi Sato (Hiroshima University)
- Manami Koike (FMU)
- Mami Nemoto (FMU)
- Takashi Ohba (FMU)
- Prof. Aya Goto (FMU)
- Phlong Pisith (Cambodia)