

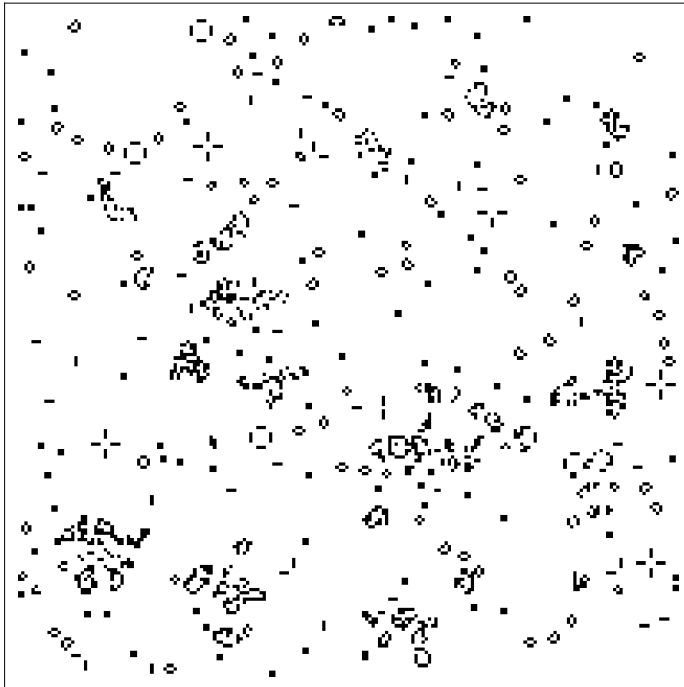
Toward Realizing Systems Supporting Cognitive Fluctuations in Dementia from a First-Person Perspective

Katsunobu Imai (Fukuyama University)

The game of life

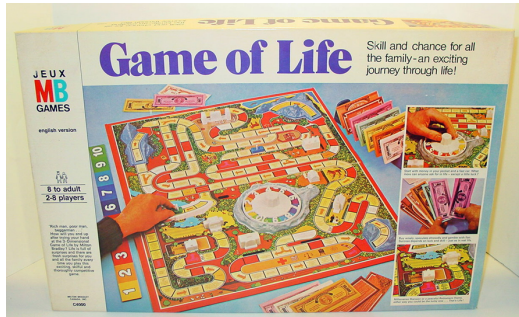
- Conway 1970, an extremely simple model of bacterial growth
- To study the asymptotic behavior of the game of life --- death, periodic repetition, unbounded growing

Out[384]=

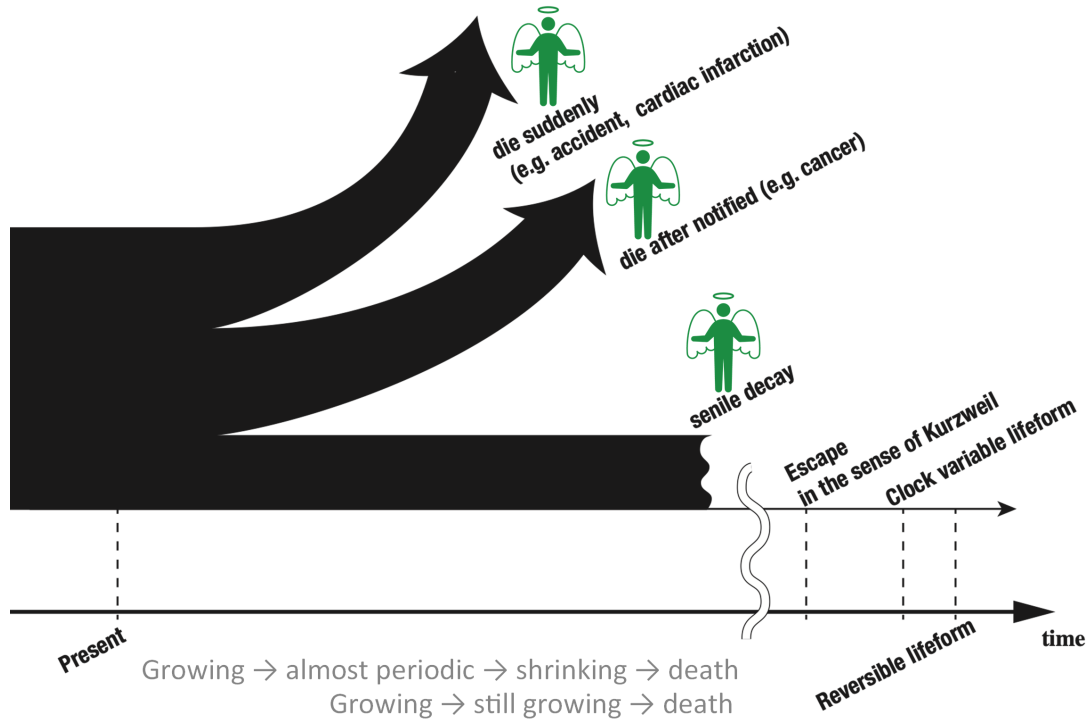


Yet another game of life

- To study the asymptotic behavior of my life --- death, periodic repetition, unbounded growing

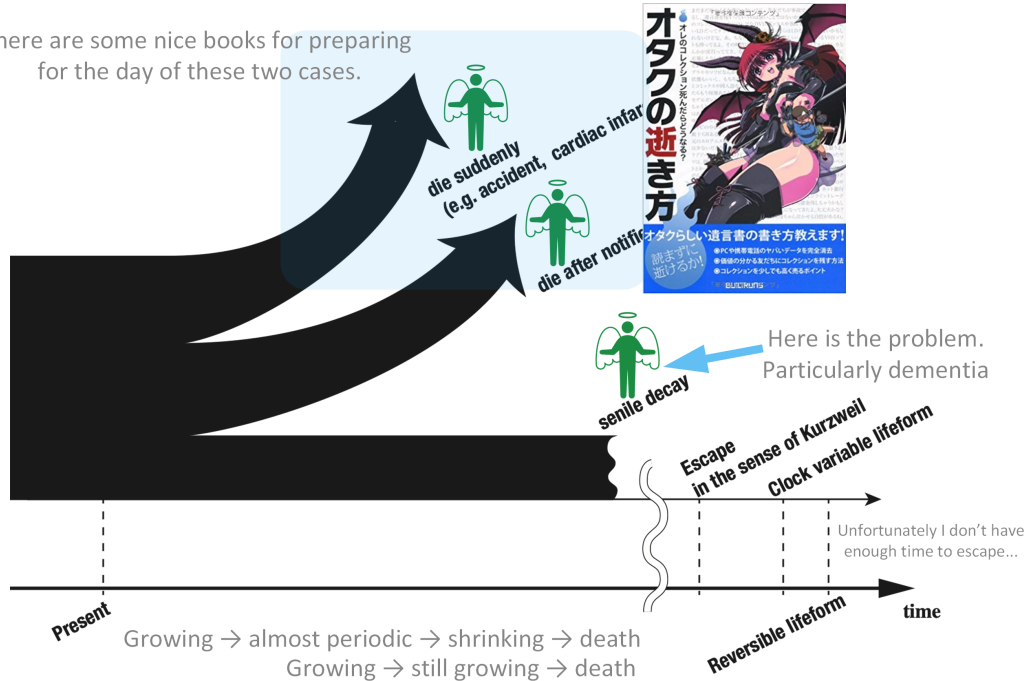


My life plan



My life plan

There are some nice books for preparing for the day of these two cases.



Dementia



Alzheimer's disease

Memory disorder and
disorientation, ...



Vascular dementia

Cognitive, motor, behavioral,
and for a significant proportion
of patients, ...



Dementia of Lewy bodies

Visual hallucinations,
and REM sleep
behavior disorder, ...

Memory loss is not always noticeable in the early stages of VD/DLB.

Irasutoya
Wikipedia

Behavioral and Psychological Symptoms of Dementia (BPSD)

cognitive level

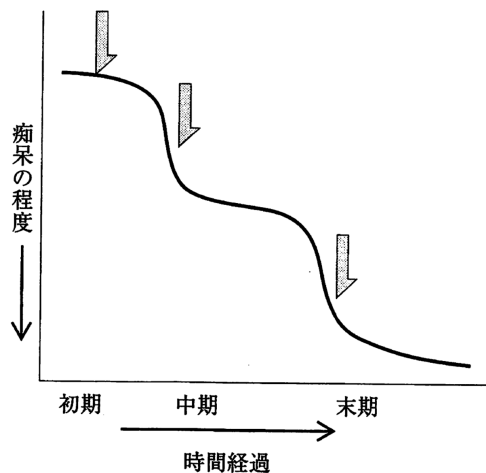


図 3-1 周辺症状の生じやすい時期(↓で示す)

小沢「痴呆を生きるということ」



Detection and palliation of BPSD are important.



Contents lists available at ScienceDirect

Sleep Medicine

journal homepage: www.elsevier.com/locate/sleep



Historical Issues in Sleep Medicine

Did Immanuel Kant have dementia with Lewy bodies and REM behavior disorder?

Marcelo Miranda^{a,*}, Andrea Slachevsky^b, Diego Garcia-Borreguero^c

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^b Faculty of Medicine, University of Chile, Chile

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ABSTRACT

Immanuel Kant, one of the most brilliant minds of the XVIII century and of western philosophy, suffered from dementia in his late years. Based on the analysis of testimonies of his close friends, in this report we describe his neurological disorder which, after 8 years of evolution, led to his death. His cognitive decline was strongly associated with a parasomnia compatible with a severe rapid eye movement (REM) behavior disorder (RBD) and dementia with Lewy bodies.

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Antidementia agents

- Acetylcholinesterase inhibitor ↑ (Donepezil, Galantamine, Rivastigmine)
 - Inhibits the acetylcholinesterase enzyme from breaking down acetylcholine caused by the lacking of neurons and gain the activity of parasympathetic nervous system.
- NMDA receptor antagonist ↓ (Memantine)
 - Inhibits excessive glutamatergic nervous excitement, reduce synaptic noise and neuronal excitotoxicity.
- Psychoactive drugs (Risperidone, levomepromazine, tiapride hydrochloride)
- Anti-amyloid β Antibody Drugs (Lecanemab, Donanemab)
 - drugs that directly target amyloid β protein, the causative substance of Alzheimer's disease, with completely different mechanisms of action from conventional drugs that alleviate symptoms

Are drugs for Alzheimer's disease actually effective?

- Currently, dementia drugs can only offer symptomatic treatment or slow down progression for several months or years at most.

※ Exceptional case report: Early use of lecanemab/donanemab

This future may be unavoidable, but...

- I want to expand my self-reliance as much as possible.
- Rather, I want to keep doing what I love until the end.

[HOME](#) > [国際](#) > [DOL特別レポート](#)

2018.5.22

中国「一人っ子政策」が招いた親と子の苛酷な現実

王青：日中福祉プランニング代表 [+](#)

[▶バックナンバー一覧へ](#)



What do I want to keep doing?

- Continue exploring natural computation
Playing with the Game of Life, ...

Dementia: living in a world like that of Memento?

Memento



망각 탐정 시리즈



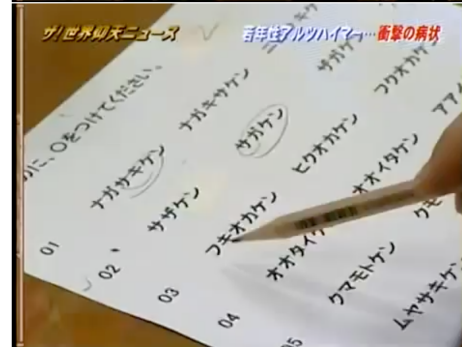
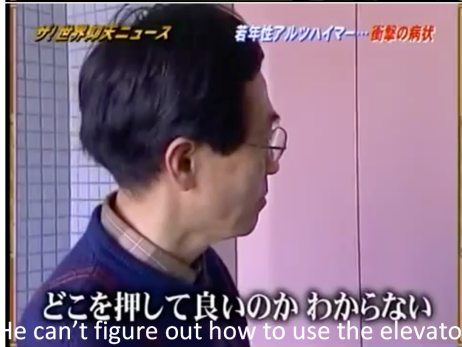
Anterograde amnesia (by herpes simplex encephalitis)

Real case: she can only hold onto memories briefly.



Early-onset dementia

ザ!世界仰天ニュース 「全てを忘れていく恐怖の病状」
<https://www.youtube.com/watch?v=joA6nloL9s>



Memory disorder

- Memory
 - Semantic memory, episodic memory (commonly affected by dementia)
 - Procedural memory (e.g. riding a bicycle)
- Memory Processing
 - Memorization
 - Retention
 - Recall (You need to recall a thing at a proper time and a place.)
 - Recollection (self-associative, commonly lost with aging)
 - Familiarity (not self-associative but enables recognition)

Dementia and losing abilities

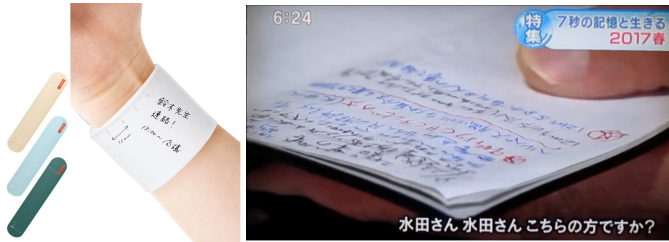
	Anterograde amnesia	Early-onset dementia (advanced)	Senile dementia (early stage)	Senile dementia (advanced)	Senile dementia (last stage)
Memorization	✗	▲	○ ▲	▲	✗
Retention	✗	▲	○	▲	✗
<u>Recollection</u>	✗	✗	✗	✗	✗
Familiarity	✗	▲	○	▲	✗
<u>Motivation</u>	○	○	▲	✗	✗
Physical	○	○	○	▲	✗

○ :better
 ▲ : getting worse
 ✗ : worst

- Losing the ability of “recollection → Losing the “driving force” of thinking
 Losing the motivation to think is not a cause but a result.

Losing the ability of “recollection.” and the “driving force” of thinking

- An early-stage dementia patient tries to memorize things, but loses them or forgets about them
- An advanced dementia patient loses the motivation to memorize things
- Even Kant used personal note-taking systems. Why are we still relying only on the same technology?



About risk-taking issue and the change of social awareness

- How to stop writing unwanted things to an SNS?

WIKIPEDIA
The Free Encyclopedia

Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store

Interaction
Help
About Wikipedia
Community portal
Recent changes
Contact page

Tools

What links here
Related changes
Upload file
Special pages
Permanent link
Page information
Wikidata item
Edit page

Print/export

Create a book
Download as PDF
Printable version

John von Neumann

From Wikipedia, the free encyclopedia

*The native form of this **personal** name is Neumann János Lajos. This article uses **Western name order** when mentioning individuals.*

John von Neumann (/nɪˈmæn/; Hungarian: Neumann János Lajos, pronounced [ˈnɒmɒn ˈjɒɒʃ ˈlɒjɒs]; December 28, 1903 – February 8, 1957) was a Hungarian-American mathematician, physicist, computer scientist, and polymath. Von Neumann was generally regarded as the foremost mathematician of his time^[a] and said to be "the last representative of the great mathematicians";^[b] a genius who was comfortable integrating both pure and applied sciences.

He made major contributions to a number of fields, including mathematics (foundations of mathematics, functional analysis, ergodic theory, representation theory, operator algebras, geometry, topology, and numerical analysis), physics (quantum mechanics, hydrodynamics, and quantum statistical mechanics), economics (game theory), computing (von Neumann architecture, linear programming, self-replicating machines, stochastic computing), and statistics.

He was a pioneer of the application of operator theory to quantum mechanics in the development of functional analysis, and a key figure in the development of game theory and the concepts of cellular automata, the universal constructor and the digital computer.

He published over 150 papers in his life: 60 in pure mathematics, 60 in applied mathematics, 20 in physics, and the remainder on special mathematical subjects or non-mathematical ones.^[4] His last work, an unfinished manuscript written while in hospital, was later published in book form as *The Computer and the Brain*.

His analysis of the structure of self-replication preceded the discovery of the

John von Neumann

John von Neumann in the 1940s

Born	Neumann János Lajos <div>December 28, 1903</div> <div>Budapest, Austria-Hungary</div>
Died	February 8, 1957 (aged 53) <div>Washington, D.C., U.S.</div>
Nationality	Hungarian
Citizenship	Hungary <div></div> United States

It is just as the good intention of parents **not to let their children hold smartphones**, is it also the carer's good intention to **keep dementia patients away from the Internet?**

Von Neumann was on his deathbed when he entertained his brother by reciting by heart and word-for-word the first few lines of each page of [Goethe's *Faust*](#).^[8] He died at age 53 on February 8, 1957, at the [Walter Reed Army Medical Center](#) in [Washington, D.C.](#), under military security lest he reveal military secrets while heavily medicated. He was buried at [Princeton Cemetery](#) in Princeton, [Mercer County, New Jersey](#).^[217]

Losing the ability of “recollection.” and the “driving force” of thinking

- I cannot but completely rely on other’s recommendation.
I have to be satisfied with **collective knowledge**.

What is your favorites?

- 1: Sports
- ✓2: Travel
- 3: Driving
- ...

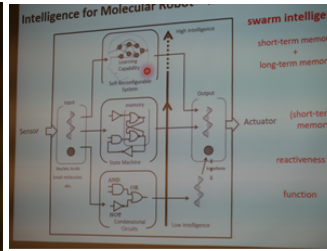
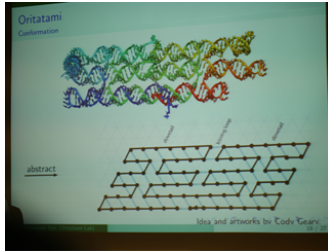
Submit

recommendation (a new story is made by the system)



- Do I have to stop thinking? Is everything decided by others?

No, I want to stay geeky!

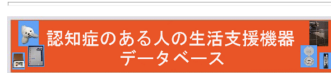


- I don't want to obey big data analysis results!

There are many proposals of supporting devices for dementia

■ Most devices are task-specific assistants

[研究所ホームページ](#) | [福祉機器開発部ホームページ](#)



現在データベースに不具合が生じており、メンテナンスを行っております。

復旧致しましたら、研究所福祉機器開発部ホームページよりご案内させていただきます。

ご不便をおかけ致しますこと、心よりお詫び申し上げます。

何のためのデータベース？(サイトの概要)

●誰が、どんな情報を得ることができる？

本データベースは、認知症のある人の生活に役立つ機器の開発の促進に向け、「認知症のある人」と「機器」をつなぐ役割を果たすことをねらいとしています。
そのため、おもに「福祉機器の開発者の方」が、「認知症のある人」と「機器」との関係性（どんな心身状況の人がどんな活動をする際、どんな機器を使うのか）について情報を得ることができるようにしています。
なお、機器は、認知症により生じる「困難さ」のうち、例えば、「記憶」や「見当識」の低下など、「認知症の困難さ」に焦点を当て、ご紹介しています。








●情報を得る際の留意点は？

現段階では、開発者の方の「認知症の機器開発に向けた意思」に立てていただくため、機器の販出作業は行わず、できるだけ多くの種類の機器をご紹介するようにしています。
よって、データベース上の機器は、必ずしも認知症のある方に有効であると検証されているわけではありません。機器情報はあくまで参考程度にお考えいただくとともに、皆様は自己責任のもとでお使いいただきます。

- 認知症のある人の生活支援機器開発の重要性を認識し
- 本データベースの活用



機器を閲覧・検索するには？

福祉用具の分類から	障害と活動との関係から	キーワードから
ISO9999による機器一覧から機器をみる	ICF国際生活機能分類に基づく生活支援機器マップから機器をみる	キーワード検索から機器をみる (検索)
■ISO9999による機器一覧を147 ■色い方	■生活支援機器マップを147 ■色い方	■色い方

ISO9999大分類項目	
22 コミュニケーション・情報支援用具	
12 音声機器	機器
30 レクリエーション用具	
09 パーソナルケア関連用具	
15 家事用具	
18 家具・建具・建築設備	
ISO9999中分類項目	
22 コミュニケーション・情報支援用具	▲このページのトップへ戻る
22 27 音響機器・信号表示器	
22 27 03 視覚的符号器	 施設管理キーボード
22 27 06 音響的符号器	 メッセージ伝達装置 (ダイヤル機能つき)
	 遠隔位置検出装置 (ダイヤル機能つき)
	 緊急停止アラーム
	 アラーム音入付 (一対分取り出し機能つき)
	 アラーム音入付
	 アラーム音入付

15 家事用具		▲このページのトップへ戻る
15 03 炊事用具	 ガスコンロ (自動消火機能つき)	 ガスコンロ (音声アラーム機能つき、自動消火機能つき)
15 89 その他の家事用具	 選択消火記録装置	
18 家具・建具・建築設備		▲このページのトップへ戻る
18 89 その他の家具・建具・建築設備	 ドア受話	 キーレスネットロック
18 06 照明器具	 ベッドサイドランプ	

Therapeutic robot



HOMEPHOTO GALLERYTRAININGVIDEOSRESEARCH PAPERSPRESS RELEASESMAINTENANCEUS USERSCONTACT

PARO Therapeutic Robot

PARO is an advanced interactive robot developed by AIST, a leading Japanese industrial automation pioneer. It allows the documented benefits of animal therapy to be administered to patients in environments such as hospitals and extended care facilities where live animals present treatment or logistical difficulties.

- PARO has been found to reduce patient stress and their caregivers
- PARO stimulates interaction between patients and caregivers
- PARO has been shown to have a Psychological effect on patients, improving their relaxation and motivation
- PARO improves the socialization of patients with each other and with caregivers
- World's Most Therapeutic Robot certified by Guinness World Records

PARO is the 8th generation of a design that has been in use in Japan and throughout Europe since 2003.

PARO has five kinds of sensors: tactile, light, audition, temperature, and posture sensors, with which it can perceive people and its environment. With the light sensor, PARO can recognize light and dark. He feels being stroked and beaten by tactile sensor, or being held by the posture sensor. PARO can also recognize the direction of voice and words such as its name, greetings, and praise with its audio sensor.

PARO can learn to behave in a way that the user prefers, and to respond to its new name. For example, if you stroke it every time you touch it, PARO will remember your previous action and try to repeat that action to be stroked. If you hit it, PARO remembers its previous action and tries not to do that action.

By interaction with people, PARO responds as if it is alive, moving its head and legs, making sounds, and showing your preferred behavior. PARO also imitates the voice of a real baby harp seal.

PARO-Certification Classes Available

PARO-Certification Classes by Prof. Sandra Petersen, DNP, APRN, FNP/GNP-BC, PMHNP-BC, FAANP
University of Texas at Tyler (spetersen@uttyler.edu)

PARO-Certification Classes by Randy Griffin RN MS HNC

PARO-Certification Classes by Corey Tague, Licensed Robot Therapist

PARO In The Scientific Literature

Changing the Culture for Dementia Care by Randy Griffin RN MS HNC

An innovative new book prescribing the path to a better way of life for people with Alzheimer's disease and other forms of dementia. Written by Randy L. Griffin, a recognized expert in the field of dementia care.

PARO Around The World

Germany: Beziehungen pflegen UG

Multimedia Features

Takanori Shibata shows PARO to Prime Minister Kan and President Obama during APEC 2010


camh

The Healing Effects Of A White Seal




KALW

Robotic Seals Comfort Dementia Patients But Raise Ethical Concerns




The Star

Robot Gets Seal Of Approval




CBS

Obama Test Drives Japanese Technology



New York Times

A Soft Spot for Circuitry



PARO is widely accepted by many care workers.

I might be willing to play with PARO every day in future, but I am wondering that the developer of PARO actually want to play with it in their old age?

There are many levels and variations of toys for each age of children. I believe there should be many levels and variations to my 'toys' of my old age.

The key point is how to control the complexity of 'toys.'

<http://www.parorobots.com>

http://www.jstage.jst.go.jp/article/johokanr/50/4/60_217/_html-char/ja

How can I continue my daily tasks after suffering from dementia?

- How to make me maintain my “notes for myself” just like a bonsai after suffering from dementia?
- A bonsai is a ‘toy’ for not only enjoying looking at, but also cultivating as it grows.



Wikipedia

A “Hänsel und Gretel” Game

They forgot the way to their house.

They forgot the meaning of the ‘breadcrumbs.’

They forgot their house.

They forgot why they needed to return to their house.

They forgot they had forgot their house.

They forgot what is their ‘house.’

They forgot each other.

...

- Add more situations by yourself! Anything might happen to us...
- It is difficult to imagine the state of having forgotten.

Bring me 'that!'



and HE Services
IT Support At Home
Free Resources
Digital Accessibility

Home > News and Blogs > [6 top tips for a dementia-friendly website](#) ← breadcrumb link

6 top tips for a dementia-friendly website

Claudia.Cahalane | 22 Feb 2017

1 Links and buttons

Make sure links and buttons clearly indicate their purpose. I.e, they should make sense in their own right, not just in conjunction with surrounding text. For example, rather than a link or button saying 'click here for more information', it should say 'click here for more information about speaking to the bank' or 'speak to the bank here'.

2 Make essential navigation items obvious

Important parts of a page/ site ie, the Home button, the search box and a site map should be very easy and clear to locate consistently across a website.

What is "one page"?

3 Don't split one piece of information over more than one page

Splitting forms and information across several pages can lead to disorientation. Put the whole form or text on one page so a visitor can easily scroll up and down to see what they've already filled in / read.

4 Help orientation for people with dementia by using breadcrumb links

Use 'breadcrumb' links (the ones with the > arrows) in an obviously visible place on the page, so it's clear for someone to be reminded of the route they've taken to get to a page, and to see which section they're currently in. I.e. current account> outgoings>today.

5 Fonts and aesthetics

Use a consistent font to minimise distractions and confusion, along with plain backgrounds and well-contrasted colours. Relevant photos on the page can be very useful for comprehension, allowing a user to understand content without disorientation.

6 Words and text

Use short sentences and avoid abbreviations and jargon.

NEWS

Current Vacancies

Accessibility and Usability
Consultants
28 Feb 2019

Disabled User Testers
28 Feb 2019

Disabled Students' Allowances
(DSA) Assessor -
Subcontractor
28 Feb 2019

Workplace (WPA) Assessor -
Subcontractor(s)
28 Feb 2019

This is a kind of
encoding
problem of
communication.

"Universal design"
may not be useful.

In most cases I rely on many (quite
personal) abbreviations, simplified
concepts, and their associations.

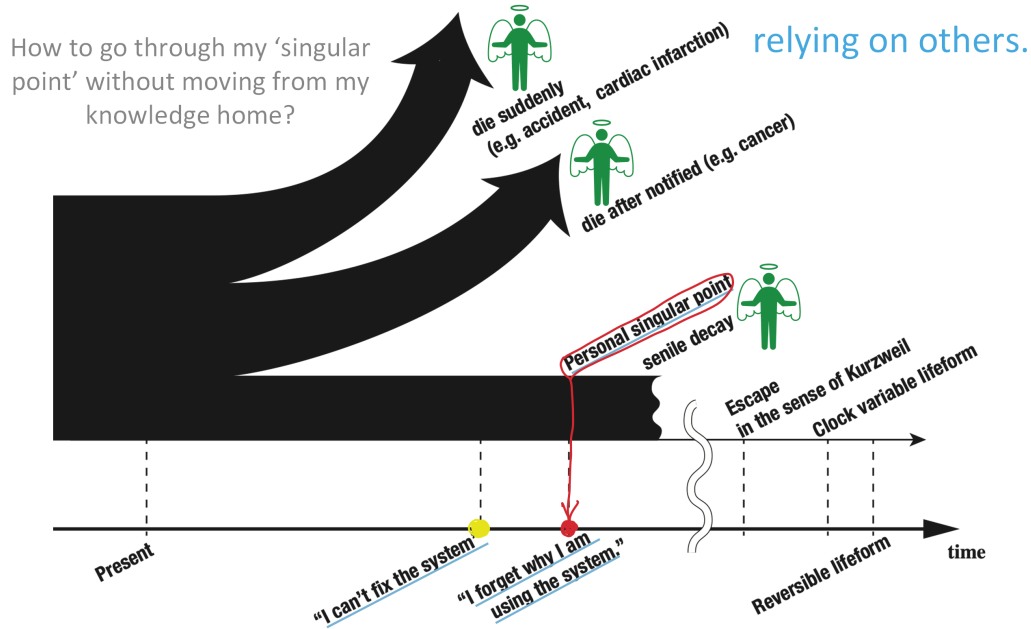
What is desired?

"Hey Siri, bring me 'that'!"

「영감택, 그거 가져와」

How to choose a proper encoding for each patient?

But the system must be essentially 타력본원 (taryeok bonwon).



Knowledge Home

Out[313]=



This word by Toffoli 2002, 2004

- **Memory disorder** and **disorientation** might be the same.
- Moving to another house results in a worsening of symptoms of dementia. One loses one's orientation.
- I do not want to move from my 'knowledge home!'
- How to make my 'knowledge home' and make me avoid kicking out of it after my 'singular point?'
- How to make me notice the fact that I tried preparing it for me after my singular point?

Then what is the knowledge home?

My knowledge home should include my thinking process.

- This relates to biometrics.
- A thinking process creates a work trajectory (a projection).
- My thinking process may be a serialization of things stored in my brain.
- It will be estimated by capturing my work process.
- How to capture my work process?

An experimental mailing list

Let's start from our very old experiment.

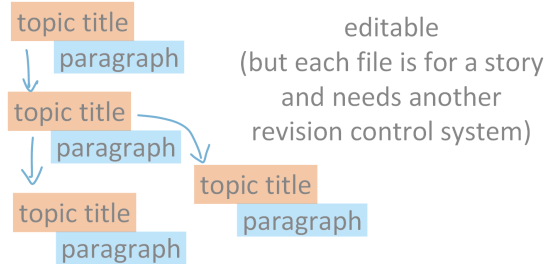
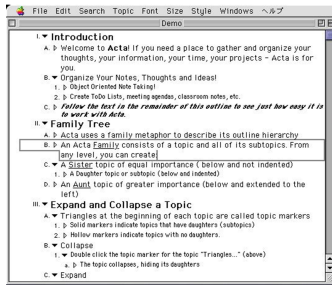
- Our 1st motivation: how to discuss something via email without the discussion diverging?
- We had to submit our work to a workshop.
- We found it difficult to discuss this by email.

We hated traditional BBSs, file systems, and hierarchical directories

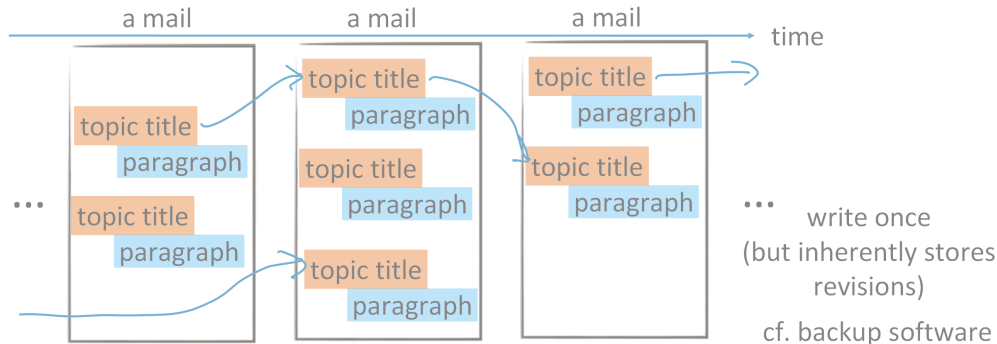
- Off-topic posts are usually criticized, but tracking discussions across different topics must be important.
- File: If the goal of a discussion is not fixed, it is difficult to compile into a file.
- A discussion structure may not follow a thread or tree format but rather a web (graph) structure.

Our mailing list protocols for collaboration

A file of an Outline processor



Our usage of emails



How to write emails for our mailing list?

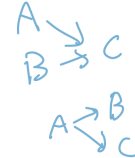
Three rules:

- * Each topic title has an id.
- * A paragraph has at most three topic titles.
- * Quoting a sentence in a paragraph must be specified by using a special quote marker.

⊙ topic A
paragraph

⊙ topic A
○ topic B
paragraph

⊙ topic A
○ topic B
• topic C
paragraph



Three topic titles are enough to represent “multiple inheritance” and the splitting of a topic. Two are not enough.

Our mailing list and a mail example

From Feb. 1992 to Jun. 2005 (over 13 years)

6504 mails

4115 topic titles, 19880 quote/quoted links, 1566 external links, 4934+15385 topic-to-topic relation links.

用いたメーリングリストのメールの例

From oops-adm@satsuki.ics.es.osaka-u.ac.jp Sat Sep
Message-Id: <199609061403.XAA02365@satsuki.ics.es.
From: imai@ke.sys.hiroshima-u.ac.jp (Katsunobu IMAI
Reply-To: oops@satsuki.ics.es.osaka-u.ac.jp
To: oops@satsuki.ics.es.osaka-u.ac.jp
Subject: re:ino are neta
Date: Fri, 6 Sep 96 23:03:33 +0900
Errors-To: oops-adm@satsuki.ics.es.osaka-u.ac.jp
X-Ml-Posted: Fri, 6 Sep 1996 23:03:04 +0900
X-Ml-Name: OOPS Mailing List
X-Ml-Counter: 3657

これも omote に移そう.

- ◎ 生体・理工学シンポジウム[k1 1358]
- パーチャル実験室[k1 1359]
- ・ AltaVista[k1 1365]

<a href="http://kelp.ke.sys.hiroshima-u.ac.jp/expo
第11回 生体・理工学シンポジウム
まったく、つくづくもって熱烈に断るんだったと
後悔しきりだが (笑)

ここ一週間ぐらい悩んでいたのだが、全然らちが
あかない、何にも思いつかないのだった.

ともかく、基本は AltaVista[k1 1365]みたいな
Web 検索サーバの検索結果に何らかの小細工を入
れて、ちょっと便利なものにしよという方針で
あるわけだが、もう締め切り近いのになんにも手
が無くて本当に困り果ててしまったわけだ.

oops: 3657

[prev]/[index]/[next]-----[qm]
Date: Fri, 6 Sep 96 23:03:33 +0900
Subject: re:ino are neta
From: imai@ke.sys.hiroshima-u.ac.jp (Katsunobu IMAI)

これも omote に移そう.

- ◎ 生体・理工学シンポジウム[k1 1358] (prev/next)
- パーチャル実験室[k1 1359] (prev/next)
- ・ AltaVista[k1 1365] (prev/next)

第11回 生体・理工学シンポジウム

まったく、つくづくもって熱烈に断るんだったと
後悔しきりだが (笑)

[3739]

ここ一週間ぐらい悩んでいたのだが、全然らちが
あかない、何にも思いつかないのだった.

ともかく、基本は AltaVista[k1 1365]みたいな
Web 検索サーバの検索結果に何らかの小細工を入
れて、ちょっと便利なものにしよという方針で
あるわけだが、もう締め切り近いのになんにも手

oops: 3739

[prev]/[index]/[next]-----[qm]
Date: Mon, 30 Sep 96 12:34:53 +0900
Subject: uchidome
From: imai@ke.sys.hiroshima-u.ac.jp (Katsunobu IMAI)

- ◎ 生体・理工学シンポジウム[k1 1358] (prev/next)
- パーチャル実験室[k1 1359] (prev/next)
- ・ AltaVista[k1 1365] (prev/next)

HoTaMaLe[k1 1383]で変換したものに、どうしても
ない部分だけをちょっとだけ手直したものを

生体理工学シンポ96用原稿

に置いた、標準設定のまま使っているのだが、設定を
変えと出なくなってしまうので手の入れようがない。
それが、ドキュメントが日本語だからなのか、今の
HoTaMaLe[k1 1383]がこの程度だからなのかは不明.

内容がないんだ、細かい実装の話などは書けるはずも
ないし、だいたい、

- Quote (from 3657) -

ここ一週間ぐらい悩んでいたのだが、全然らちが
あかない、何にも思いつかないのだった.

- Unquote -

のあと実働はプログラム書きと文章書きを含めて

4934+15385 topic-to-topic relation links

Relation:

Toffoli [\[lst\]](#) [\[cf\]](#)

- 自己触媒集合 [\[lst\]](#) [\[rel\]](#)
- MIT AI lab. [\[lst\]](#) [\[rel\]](#)
- 時間 [\[lst\]](#) [\[rel\]](#)
- Knowledge Home [\[lst\]](#) [\[rel\]](#)
- テスター [\[lst\]](#) [\[rel\]](#)

- MIT AI lab. [\[lst\]](#) [\[rel\]](#)
- Knowledge Home [\[lst\]](#) [\[rel\]](#)
- iChat [\[lst\]](#) [\[rel\]](#)
- Unconventional Models of Computation [\[lst\]](#) [\[rel\]](#)

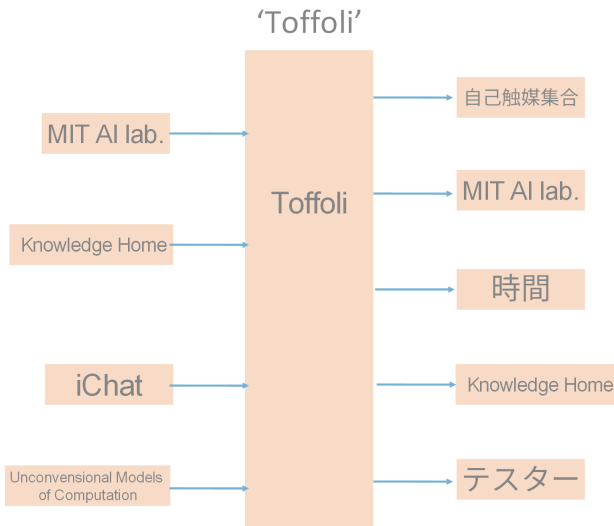
cf.level 0

- 自己触媒集合 [\[lst\]](#) [\[rel\]](#) (6444)
- topic title [\[lst\]](#) [\[rel\]](#) (6444)
- うつぶすえむえるloops mailing list [\[lst\]](#) [\[rel\]](#) (6444)
- packing [\[lst\]](#) [\[rel\]](#) (6444)
- Toffoli 先生, 最小作用を語る [\[lst\]](#) [\[rel\]](#) (5986)
- Wolfram [\[lst\]](#) [\[rel\]](#) (5986)
- Toffoli [\[lst\]](#) [\[rel\]](#) (5986)

level 1

- ナチュラリスト [\[lst\]](#) [\[rel\]](#) (5994)
- Toffoli 先生, 最小作用を語る [\[lst\]](#) [\[rel\]](#) (5994)
- 自己触媒集合 [\[lst\]](#) [\[rel\]](#) (5994)
- topic title [\[lst\]](#) [\[rel\]](#) (5994)
- うつぶすえむえるloops mailing list [\[lst\]](#) [\[rel\]](#) (5994)
- packing [\[lst\]](#) [\[rel\]](#) (5994)
- Minsky [\[lst\]](#) [\[rel\]](#) (5994)
- アシモフ死去 [\[lst\]](#) [\[rel\]](#) (5994)
- Reversible Cellular Automata(RCA) [\[lst\]](#) [\[rel\]](#) (5994)
- 日本橋 [\[lst\]](#) [\[rel\]](#) (5992)

Ex: Topics in the neighborhood of the topic



Employed topics in the context of ‘Toffoli’

自己触媒集合, packing, reversible cellular automata, \tilde{N}

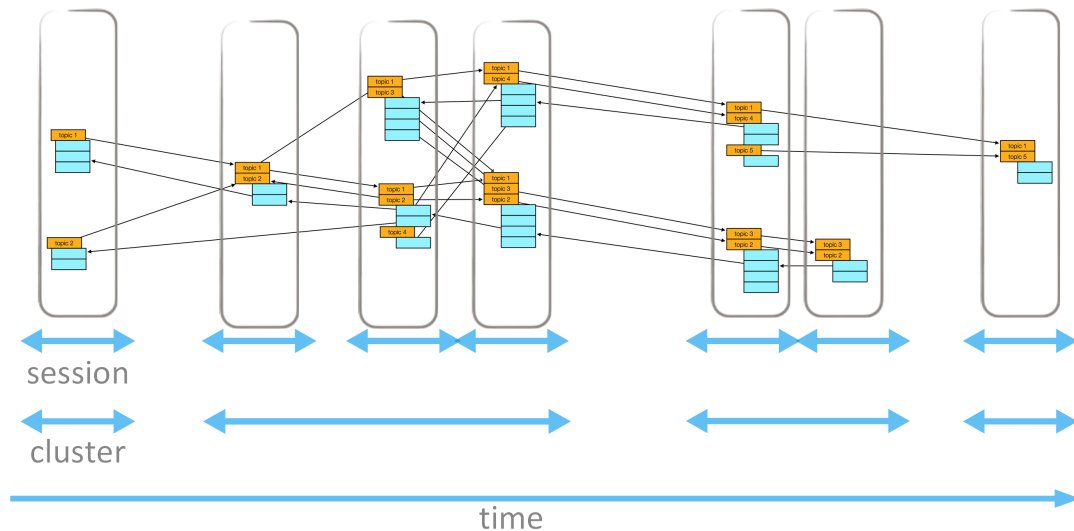
Yes, I already have my knowledge home!

- Thinking seems to be a serialization of a knowledge subgraph.
- Dementia first attacks the serialization ability.
- Recording any clue for finding paths, creating new connections, and displaying them is most important for the system.
- Wandering (徘徊) is a good effort to cope with dementia.
 - The system should promote wandering in the graph, because each wandering path is the projection of a serialized thinking process anyway.
 - The system should detect wandering patterns and regulate the graph's structure to preserve one's knowledge home.

This approach might enable thinking without serialization...

Topic relations & quote reference graph

- Discussions form clusters



Data privacy is also important

oops-ura: 2507

[\[prev\]](#)/[\[index\]](#)/[\[next\]](#)-----[\[gm\]](#)

Date: Fri, 8 Jul 94 03:07:33 +0900

Subject: Re: oops-ml > HTML, access control

From: MIYASHITA=?ISO-2022-JP?B?GyRCJEEkHsoQg==?= kensuke

© oops mailing list [\[ki.1\]](#) ([prev](#)/[next](#))

○ HTML(Hyper Text Markup Language) [\[aga.250\]](#) ([prev](#)/[next](#))

・ hml[\[ki.626\]](#) ([prev](#)/[next](#))

- Quote (from 2505) -.

oops-ml に対して、oops-ml-ura とかいうような mailing-list を作って、mail counter などは両方とも共有するなどと言う細工は簡単にできるだろうか？ "oops-ml-*" なる ml は共通に扱うという路線で、もしそうなら、危ないネタを書きたいときは「裏oops-ml」に mail を出すようにして、切り替えるというのはどうだろうか？

- Unquote -.

あ、それはいいかも。賛成。

X-Ml-Count を共有するのは簡単だね？ >t-nisida

- Quote (from 2505) -.

単なる mailing list でグループ定義などをするにはこんな方法しか思いつかないのだが、

- Unquote -.

[\[2508\]](#)

いま思いついたけど、X-ほげほげ っていうヘッダは自由に作っていいはずなので

X-ReadPermission:

なんつーヘッダを作って、mailing list only と anonymous を分類するとかは如何でしょうか。

うーん、裏oops を作る方が楽か...

みやした

The case of our mailing list:

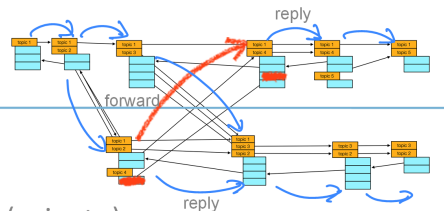
Each list is for a certain privacy level.

Privacy level

omote (public)

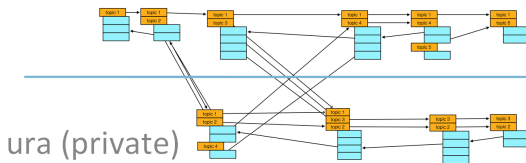
ura (private)

high



Data privacy is also important

omote (public)



Topics in 1999/11 mails.

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- #5809 99.11.01 23.53.23.?
- #5810 99.11.02 12.57.13. 病気 ざっくり腰 MacOS MacOS 9 file managerNew & Improved Inside Macintosh 倒産Finale ATM ヒラギノ/明
- #5811 99.11.02 12.59.54. Newton project Sieve Capps 本 倒産Finale 保育社
- #5812 99.11.02 13.03.54. Vitamin B complex めまい 肩凝り
- #5813 99.11.02 13.27.47. OpenGL DORE
- #5814 99.11.04 11.56.07. OpenGL retained mode めまい カイロ・ブラクティック 肩凝り
- #5815 99.11.04 13.25.49. 電子オルガン Technitone MIDI 安田寿明 大江戸捜査網 Trax
- #5816 99.11.05 12.56.41. 電子オルガン Technitone MIDI 大江戸捜査網
- #5817 99.11.08 12.52.36. name card (名刺) erabo Technitone MIDI 大江戸捜査網 RAVEL, Maurice ハンド付け用の曲 ケーブラシの墓(La Tombeau De Couperin)
- #5818 99.11.08 22.37.12. name card (名刺) erabo
- #5819 99.11.15 20.06.44. NCR QuickGarage奈良先端科学技術大学院大学(NAIST) PowerBook2400c 生体・理工学シンポジウム MCLIMCL2.0 mailing list ソフトウェア成長モデル
- #5820 99.11.15 20.09.16. name card (名刺) erabo
- #5821 99.11.15 20.28.15. Adobe Systems MetaCreations
- #5822 99.11.16 20.16.06. 本 Cellular Automata Permutation City (朝刊都市)
- #5823 99.11.19 19.18.37. OpenDocOpenDoc MacOS 9 AppleShare IP
- #5824 99.11.20 01.14.13. name card (名刺) erabo
- #5825 99.11.25 15.09.54. QuickGarage奈良先端科学技術大学院大学(NAIST) PowerBook2400c NuPower G3 for 2400 URL 雑誌 (Magazine, Journal) Elsevier Science PDF Theoretical Computer Science Information Processing Letters
- #5826 99.11.25 15.09.18. 雑誌 (Magazine, Journal) 査読 Elsevier Science name card (名刺) erabo
- #5827 99.11.25 15.55.08. テレビ 倒産Finale 訴訟 特許 PL 法 SEGA 特許侵害(SEGAの特許侵害)
- #5828 99.11.25 16.14.06. テレビ 心理探偵フィック 宇宙船レッド・ドワーフ号 (RED DWARF) 特許 2000年問題 windowing 通販 computer
- #5829 99.11.27 23.31.05. 雑誌 (Magazine, Journal) 査読 name card (名刺) erabo
- #5830 99.11.27 22.00.38. QuickGarage奈良先端科学技術大学院大学(NAIST) PowerBook2400c NuPower G3 for 2400
- #5831 99.11.29 09.36.57. name card (名刺) erabo
- #5832 99.11.29 21.20.32. Cracking
- #5833 99.11.30 01.04.44. name card (名刺) erabo
- #5834 99.11.30 22.33.53. name card (名刺) erabo

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Topics in 1999/11 mails.

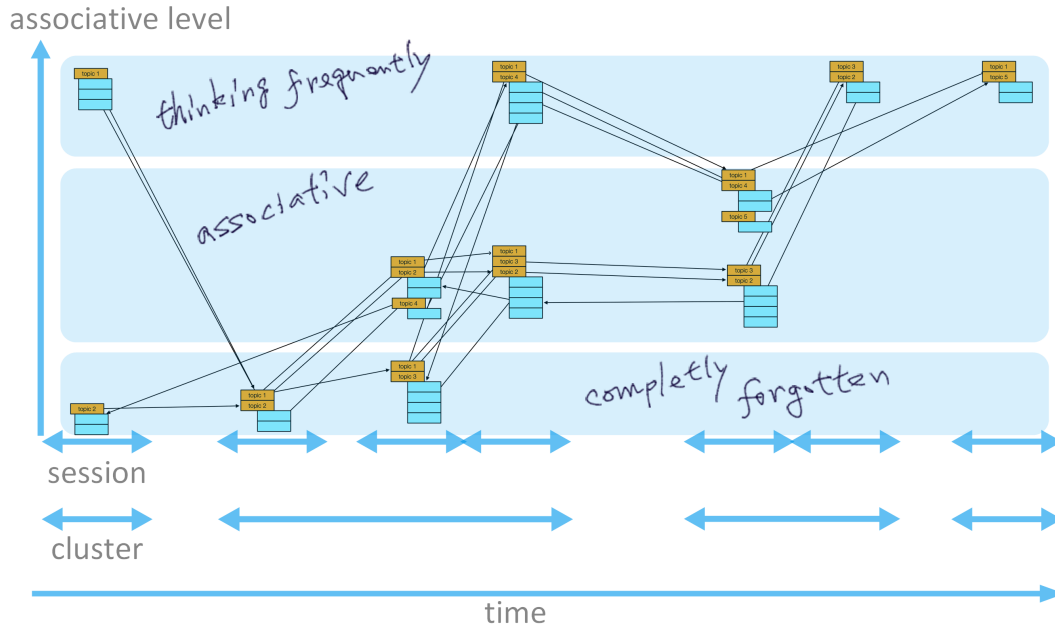
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- #5810 99.11.02 12.57.13. 病気 ざっくり腰 MacOS MacOS 9 file managerNew & Improved Inside Macintosh 倒産Finale ATM ヒラギノ/明
- #5811 99.11.02 12.59.54. Newton project Sieve Capps 本 倒産Finale 保育社
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- #5834 99.11.30 22.33.53. name card (名刺) erabo

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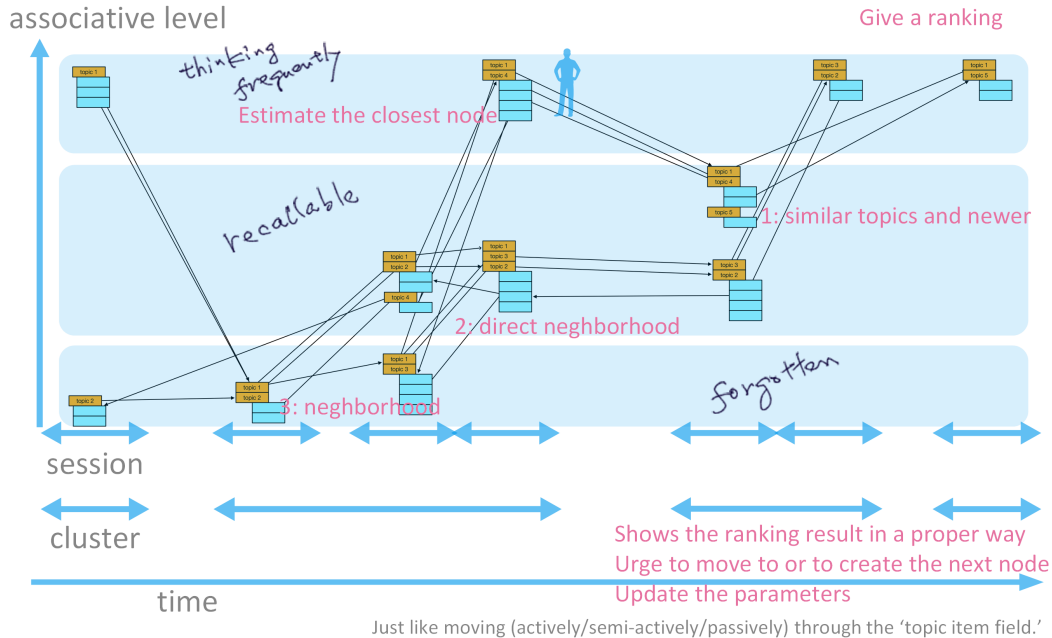
Associative level

- How much you remember from past emails.
- Associative level varies



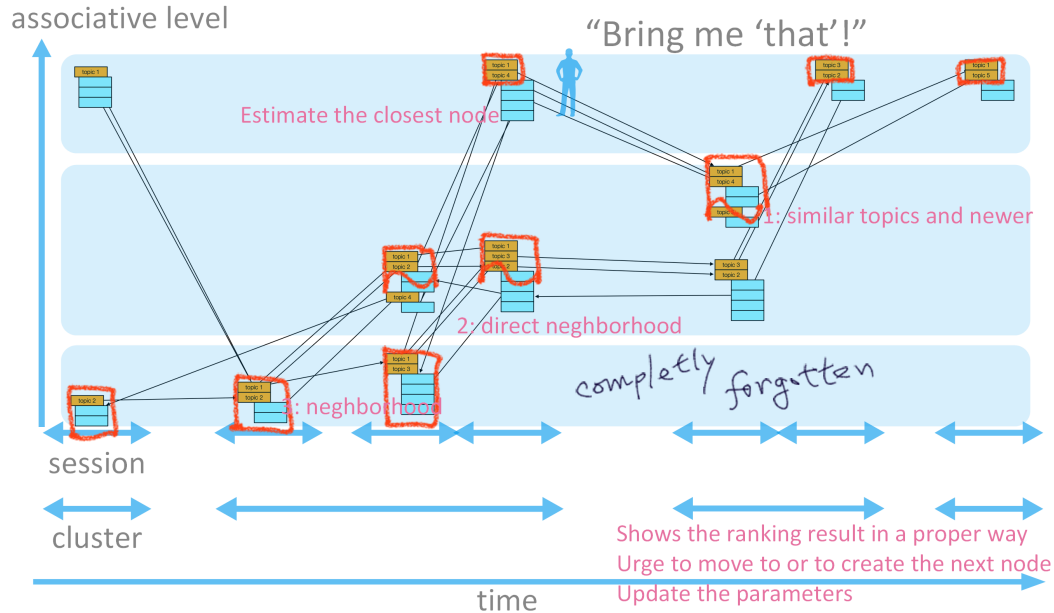
The desired behavior of the system

- Find the node that best matches current thoughts
- Estimate the associative level of each node



Content presentation based on associative level

- High associative level nodes: present concisely
- Low associative level nodes: present in detail



Example: quote/quoted relations

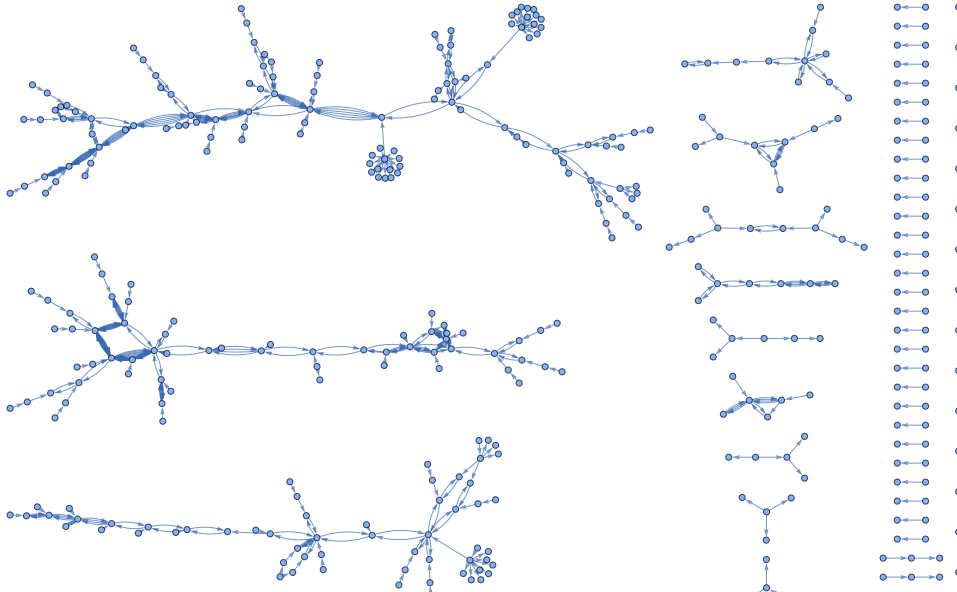
- From Jan 2000 to Dec 2000

In[314]:=

```
graph2 = Get["oops-m1-graphRAG-2000.w1"];
```

In[*]:= GraphPlot[graph2, VertexLabels → None]

Out[*]=



LLM Advances Enable Flexible Data Retrieval

- Retrieval-Augmented Generation (RAG): Seamless retrieval of personal data
- GraphRAG (Graph-based Retrieval-Augmented Generation)
 - + appropriate graph structures
- Different knowledge sources: mailing lists, SNS, email data
You can utilize your SNS/email archive data!

A GraphRAG implementation

```
In[*]:= graphRAG[graph2, "the Y2K problem, list them in detail with  
their corresponding node numbers. Return results in English.", 4, 5]
```

```
Out[*]=
```

The Y2K problem, also known as the year 2000 problem, arises from the practices of computer systems using two digits to represent the year, potentially leading to errors when the year rolled over from 1999 to 2000. Below are detailed aspects of the Y2K problem along with their corresponding node numbers:

1. ****MCL****: Node 22
 - Mentioned the Y2K problem and its necessity for patches in software, like converting "100" to "2000."
2. ****2000年問題 (Y2K Problem)****: Node 11, 20, 34, 37, 44
 - These entries specifically refer to the Y2K problem.
3. ****oops mailing list****: Node 12, 21, 35, 38, 45
 - The mailing list contained discussions and concerns related to the Y2K problem.
4. ****Perl****: Node 13, 36, 39, 46
 - Perl scripts were highlighted as particularly vulnerable to issues related to the Y2K problem.

Estimating the associative level

- Measuring the time needed to understand a forgotten episode
- Direct system inquiry: “Just ask me directly!”
- Biometric signals aid estimation (soliloquy, body motions, heart rate, eye tracking, etc.)

Cognitive level

Another important parameter

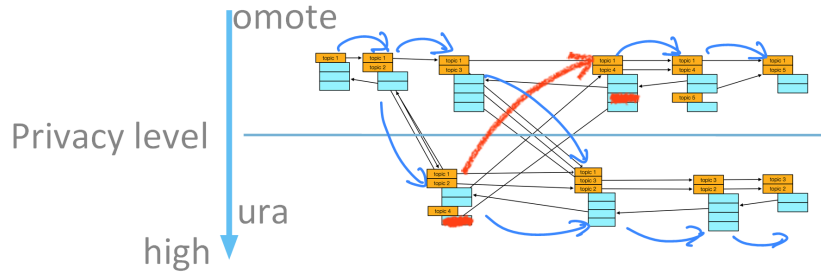
How to prevent posting unwanted content to SNS?

- High cognitive level enables better concentration control across multiple targets
- User-generated content reflects cognitive level
- ↓ Maximum cluster length & ↓ Cognitive level = Harmful combination!

Cognitive level

- For operations lowering privacy levels, the system executes, stops, or camouflages based on cognitive level.

The system should focus on the activity of the red arrow.



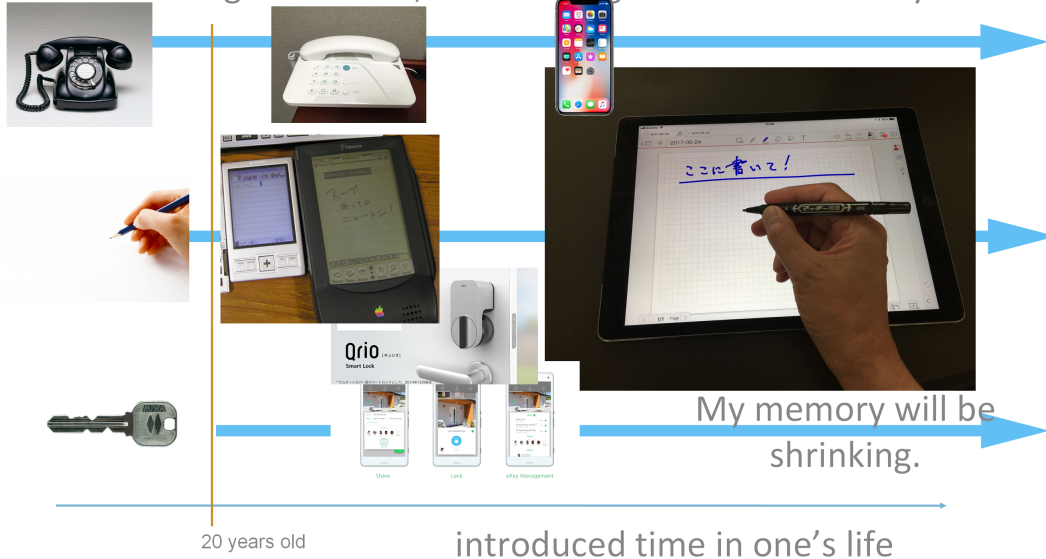
How to camouflage the forwarding?

cf. Honey pot

Each generation has its iconic device

Memories converge around age 20

When the stage advances, recent things will be lost one by one.



Privacy issue

- Google failed to introduce Google Glass, but Amazon has so far successfully introduced a number of 'privacy violating' services.
- I want to enter into a contract with an IT company that will be the 'driving force' of my thinking.
- This will cause a serious privacy problem.
- But I would face an even more serious problem with healthcare workers if I don't seek help from IT companies beforehand.

The future after consigning my 'soul'... paradise or nightmare?

- Does implementing a periodic background process (within my finite network) help reduce my fear of the future?
- Context switching via periodic background processes might be a gateway to my new time-sharing 'Nondeterministic' Life...