

ネットワークコミュニティのリアリティ ネットを介したコミュニケーションは本当に役に立つの？ -



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Network Communities

- New types of communities are emerging
 - (Traditional) community:
 - ◆ Bounded by real situations (Geographically, Socially, ...)
 - ◆ Fewer choices to form communities
 - Network community or online community:
 - ◆ Free from real situations
 - ◆ Much more choices to form communities

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Frustration for Network Communities

- Network communities tend to be brittle and superficial



- Lack of Groundedness

We often feel unrest for others and even ourselves when joining network communities

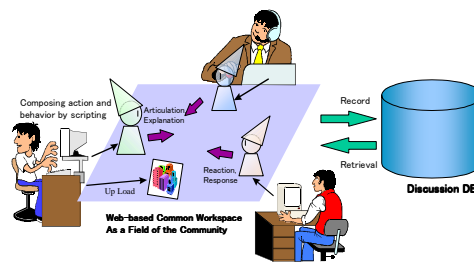
- Neglect of Awareness
 - ◆ Implicit/unconscious knowledge on others and ourselves
- Neglect of Orientation (Social or Individual Orientation)
 - ◆ Explicit/conscious knowledge on others and ourselves

Regaining Groundedness

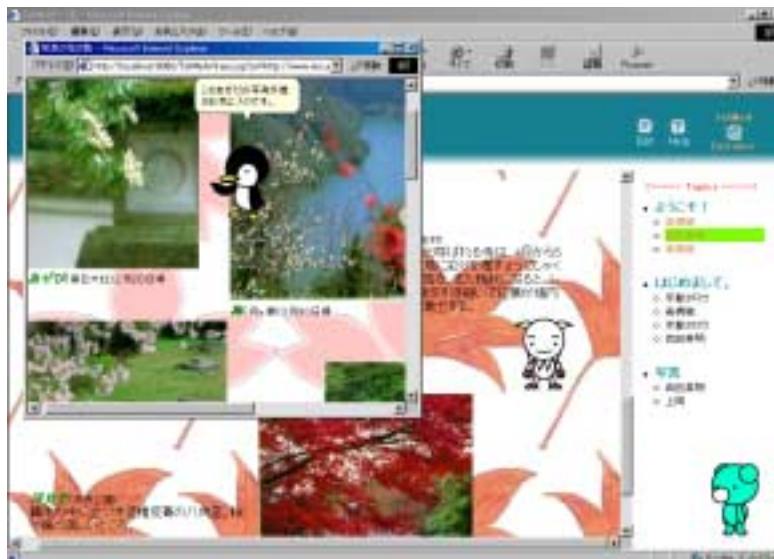
- Outcropping awareness
 - Avatar-like agent based community system
 - ◆ Vesting corporeality by agent
- Outcropping orientation
 - Bookmark-based community system
 - ◆ Knowing others' interest each other by bookmarks

TeMeA: Avatar-like based Community System

- A system to realize asynchronous community where avatar-like agents are provided for all participants
- Features
 - An avatar-like agent stands for identity of a participant
 - Communication close to face-to-face communication
 - Providing a field of community by multiple agents
- *Our Avatar-like Agent*
 - An animated agent that can perform a sort of actions and behavior
 - A scriptable agent that can be programmed easily by a script language



TeMeA

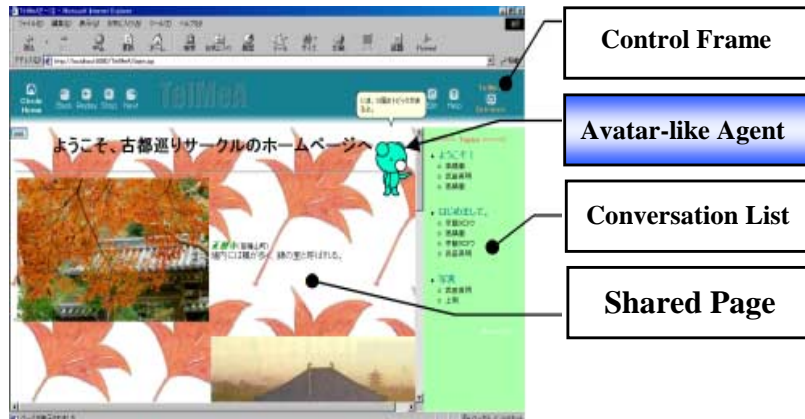


- Joint work with Toru Takahashi@NAIST/ATR MIC
- Agent Design by ATR MIC

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TeMeA

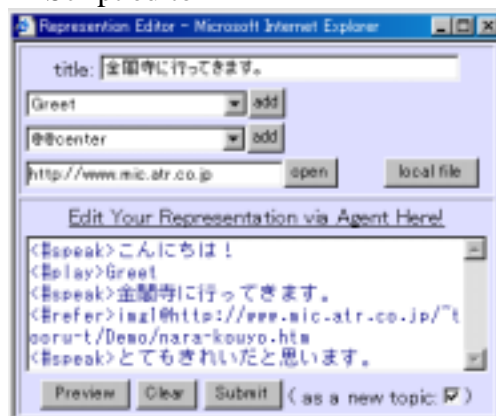
- ◆ Use WWW pages as a field for communities
 - ◆ A field where agents move around and do actions
 - ◆ A field where users upload pages and images



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ALAScript

- All messages are written with a script language called ALAScript
 - Simple tagged texts
 - Scripts are generated by ALAScript editor
 - ◆ Operating agents
 - ◆ Choosing actions
 - ◆ Writing messages



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Types of Actions

Identity

- <#actor> agent_name
 - Designate an agent to describe

Verbal Representation

- <#speak> comment_sentence
 - Utterance with voice and text
- <#think> comment_sentence
 - Utterance only with text in balloon

Physical Representation

- <#play> animation_name
 - Physical behavior by animation
- <#move> point_on_the_screen
 - Move a designated position

Interpersonal Representation

- <#approach> agent_name
 - Move around a designated agent

Representation via Objects

- <#open> webpage_url
 - Open a designated WWW page
- <#refer> image_id
 - Move around a designated image and make the agent point to the image

An Example of ALAScript

```

<#actor>Toru Takahashi
<#approach>Hideaki Takeda
<#play>Smile
<#speak>I found such a nice page
<#open>http://ai-www.aist-nara.ac.jp
<#speak>Better than the last one.
<#refer>img3@ ai-www.aist-nara.ac.jp
<#speak>I love it best in those pictures
    
```

Analysis of a Test Use

- Public in the institute for 9 days
- 7 people accessed the system
- 7 communities are created
- 18 messages are posted

<speak>	352
<play>	53
<move>	4
<approach>	10
<open>	2
<refer>	3
Total	424

Verbal Rep.	83.0%
Physical Rep.	13.4%
Interpersonal Rep.	2.4%
Rep. Via Objects	1.2%
Non-verbal Rep.(total)	17.0%

Analysis of messages by phrase

Subjective Evaluation

- Subjective Evaluation (5 Ranks ; 1: the most positive, 5: the most negative)
 1. Evaluation of agents and fields: Perception, acceptability, and usefulness
15 questions: average 2.41
 2. Evaluation of individual functions (Animation, moving etc.)
8 questions: average 1.50
 3. Comparison with other communication tools
7 questions x 3 tools: average: 2.29



- ◆ Positive Evaluation for all aspects

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Analysis of Subjective Evaluation

- Perception of agents: Avatar vs. Delegate
 - Some users looks as avatar, others as delegate
 - Most of users are consistent in perception of agents of others and of themselves
 - No significant effects to other evaluations
- Acceptability and Usefulness
 - Usefulness of agents > Acceptability of agents
 - Acceptability of agent fields > Usefulness of agent fields
 - Acceptability of agent fields > Acceptability of agents
- Usability in comparison with other tools
 - Joyful > usefulness, expressiveness > variety of information

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Regaining Groundedness

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Purpose

- Generation of human network guiding individual information activities
 - An example
 - ◆ I want to watch sports programs on TV. What your recommendation?
 - Who and What
- Shared Topics Network among Users (STN)

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Our approach

- Combination of manual and automatic methods
 - Identification of topic
 - ◆ Use of bookmark files as users' knowledge
 - To overcome knowledge acquisition problem
 - Discovery of inter-topic relations
 - ◆ Text analysis to calculate inter-topic relations

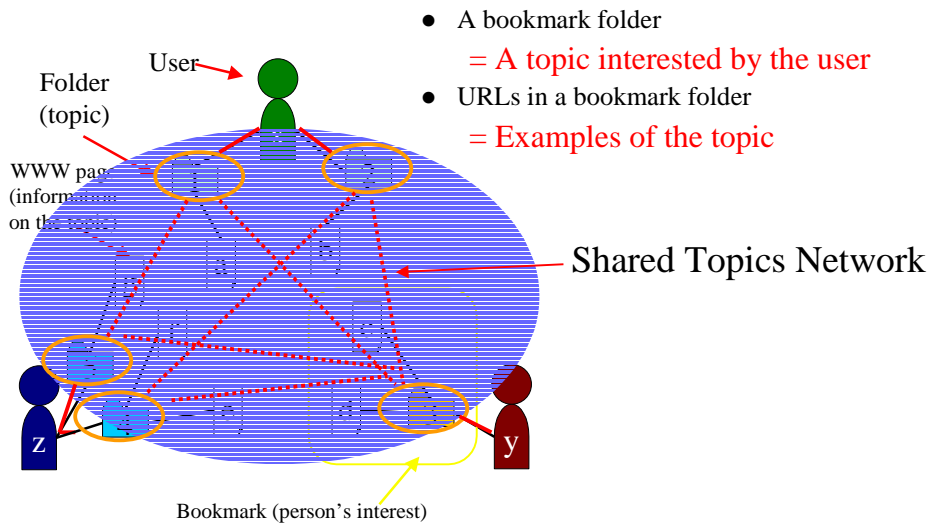
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Knowledge Acquisition Problem

- Difficulty to identify topics automatically
 - Examples
 - ◆ Learning: Webwatcher, Letizia
 - ◆ Categorization: Webmate
 - Weakness of text analysis methods
 - “Persistence of interest” hypothesis
- Bookmark files as users' knowledge
 - Bookmark structures are results of implicit/explicit efforts to organize their information

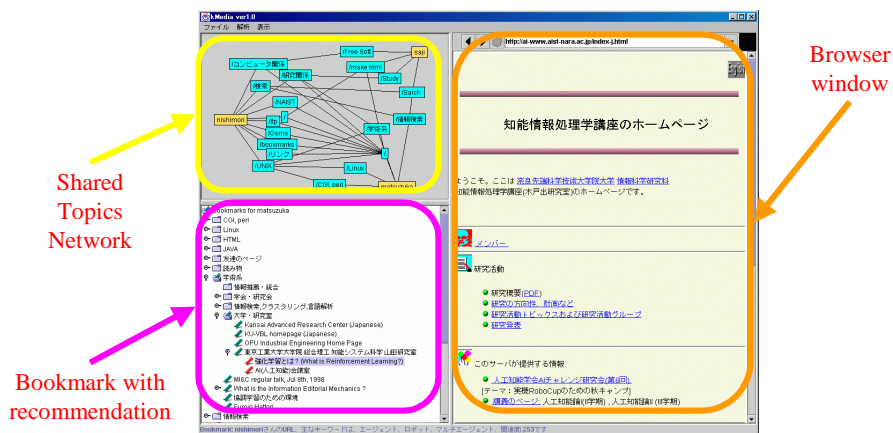
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Bookmarks as Knowledge



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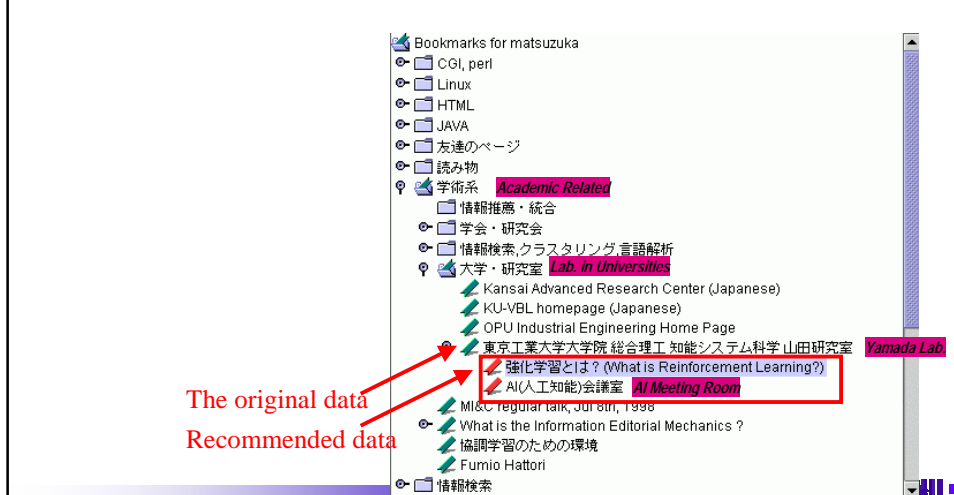
kMedia Interface



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Bookmark with recommendation

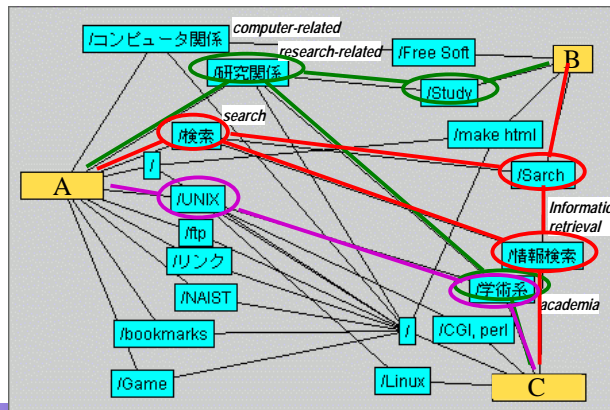
- Two pages are related
- ➡ Each page is a recommended page to the other



Discovery of topic relations

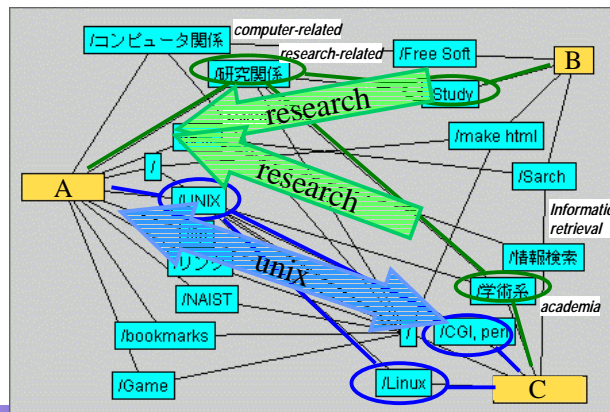
- Common relations
 - (search, IR), (academia, research-related)
 - similar but words themselves are different
- Un-common relations
 - Speciality of the community

...(Unix, academia)



Discovery of relationship among people

- What are common topics with others?
- Who is good at this topic?



Validity of recommended pages

Validity of page relations

	Good ← → Bad				Total	
User A	2 9	3 0	2 7	7 7	1 8 2	3 4 5
User B	9 4	8 6	7 3	1 8 5	7 5	5 1 3
User C	6 6	9 0	8 8	8 8	1 2 2	4 5 4
Total	1 8 9	2 0 6	1 8 6	3 5 0	3 7 9	

Validity of topics relations

	Good ← → Bad				Total	
User A	3	3	2	0	2	10
User B	3	3	2	2	0	10
User C	2	0	1	0	0	3
Total	8	6	5	2	2	

Summary

- Searching a new type of “reality” for communities
 - Free from real constraints
 - But **grounded** on our implicit/explicit knowledge
- Two systems are proposed
 - TelMeA: Regaining corporeality
 - kMedia: Regaining orientation for others and ourselves
- Future Directions
 - More discussion on “Identity of persons in network”
 - ◆ *Grounded Virtual Characters on the Network*
 - ◆ *Grounded Virtual Fields on the Network*

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体験モードと内省モード

- 思考の二つのモード (D.A.Norman)
 - 体験モード：物語的、習慣的、感覚的
 - 内省モード：論理的、熟考的、概念的
- **両者が適当にバランスすることが重要**
- 情報技術で**体験モード**を支援することは容易
 - 新しい体験モードの提供
- では内省モードは？
 - 考えることは自分でしかできない
 - 自ら考えさせるモードへのスムーズな移行

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Mind Heap

文脈情報を利用した連想知識構造の構築と提示

•アプローチ

ユーザが明示的に入力した知識のみならず、ユーザが入力しなかった暗黙的な前提知識の利用を考える。

- HTMLブラウザをインターフェースとして連想知識構造を構築



知識を入力したときに表示されていたHTMLファイルを解析することによって、知識の周辺に付随する文脈情報にアクセスすることが可能。

→こうした文脈情報をも含めて、連想知識構造を構築する。



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