Multilingual issues of scholarly publishing in Japan

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Japan Link Center (JaLC)

- A Registration Agency (RA) for the DOI Foundation
- Founded on 2013
- Four founding institutions:
  - National Institute of Informatics (NII)
  - Japan Science and Technology Agency (JST)
  - National Diet Library (NDL)
  - National Institute for Materials Science (NIMS)
- Membership
  - Full member: 71
  - Associate member: 2837
- Scope: **scholarly publication in Japan**

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DOI search 10.XXXX/<number>

The DOI registration number
10,076,120
Jan.1,2023

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JaLC is the only Japanese organization authorized by the DOI Founda
Registration Agency (RA) for DOI.
Administered jointly by academic institutions in Japan.
DOIs are assigned to various digital content including scholarly paper
research data, and e-learning, and are managed along with the conte
(URL).

Scholarly activities in Japan

- Mixture of domestic and international activities
  - Difference by disciplines

Int'l Community

- Natural Science (mathematics, physics, …)
  - English is the major scholarly publishing language
  - Japanese is mainly for domestic communication

- Engineering, medicine, agriculture …
  - Large population of practitioners (engineers, doctors, nurses …)
  - Both Japanese and English are used

- Social science and literature
  - Main language is Japanese
  - Various languages are also used

Domestic Community

My publication

論文誌　Journal

- P. Nguyen, K. Nguyen, R. Ichise and H. Takeda: EmbNum+: Effective, Efficient, and Robust _Numerical Values_, New Generation Computing, Vol. 37, No. 4, pp. 393-427 (2019).
- 飯野なみ, 西村悟史, 西村拓一, 福田賢一郎, 武田英明： 領域オントロジーと手続き的知識を併用した 演奏領域における知識構築の実践-, 人工知能学会論文誌, Vol. 35, No. 1, pp. A-J44_1-12 (2020).
- 嘉村哲郎, 武田英明： 日本人洋画家情報の基礎分析を中心とした美術分野におけるデータ基盤整備と ドキュメンテーション研究 = The bulletin of Japan Art Documentation Society / アート・ドキ No. 26, pp. 3-20 (2019).
- 朱成敏, 小出誠二, 武田英明, 法隆大輔, 竹崎あかね, 吉田智一： 農業データの連携における農作業の 研究, Vol. 28, No. 3, pp. 143-156 (2019).

国際会議　Conference

- N. Iino, H. Takeda and T. Nishimura: An Ontology-Based Development of Activity Knowled Wang, F. A. Lisi, G. Xiao and E. Botoeva eds., Semantic Technology, 9th Joint International 369-384, Hangzhou, China (2020), Springer International Publishing.
- P. Nguyen, N. Kertkeidkachorn, R. Ichise and H. Takeda: MTab: Matching Tabular Data to K Probability Models P. Shvaiko, J. Euzenat, E. Jiménez-Ruiz, O. Hassanzadeh and C. Trojahn International Workshop on Ontology Matching collocated with the 18th International Sem ISWC-2019 (2020), (Poster).
- P. Nguyen, N. Kertkeidkachorn, R. Ichise and H. Takeda: MTab: Matching Tabular Data to K Probability Models E. Jimenez-Ruiz, O. Hassanzadeh, K. Srinivas, V. Efthymiou and J. Chen Semantic Web Challenge on Tabular Data to Knowledge Graph Matching, Proceedings of Challenge on Tabular Data to Knowledge Graph Matching, co-located with the 18th Intern Conference (ISWC 2019), Vol. 2553 of CEUR Workshop Proceedings, pp. 7-14, Auckland,

テクニカルレポート、紀要　Technical Report, Preprint, Univ. Bulletin

- P. Nguyen, N. Kertkeidkachorn, R. Ichise and H. Takeda: MTab: Matching Tabular Data to K Probability Models, arXiv e-prints, p. arXiv:1910.00246 (2019).
- 武田英明： AI と社会　—未来の社会を作るのは人かAIか—, エコノミア, Vol. 70, No. 1-2, pp. 1-1

学会誌解説、商用誌　Magazine

- 武田英明： オープンサイエンスの動向と情報科学の役割：編集にあたって, 情報処理, Vol. 60, No. 5
- 武田英明： オープンサイエンスの成り立ちと学術コミュニケーションの未来, 情報処理, Vol. 60, No
- 武田英明： 人工知能の倫理をめぐる活動と関わる学会の役割, ヒューマンインタフェース学会誌, Vo (2019).
- 増田央, 西中美和, 武田英明, 白肌邦生, 木下裕介： アリゾナ州立大学(ASU)における未来共創アプロ Vol. 6, No. 3, pp. 36-39 (2019).

招待講演など　Invited Talk

- H. Takeda: The design process of domain-specific ontologies- The case studies in agricult Symposium Asia, Tokyo, Japan (2019), (Tutorial Speaker).
- 武田英明： データの社会活用のためのセマンティックウェブ技術 第42回 サイバーワールド研究会, 会.
- 武田英明： 設計のための知識とは　〜知的CADとセマンティックWeb〜 理研シンポジウム: 第4回 ータ駆動型社会におけるものづくり設計の新潮流, 日本橋, 東京 (2019), 理化学研究所AIPセンター.
- 武田英明： 人工知能の倫理をめぐる活動と学会の役割 シンポジウム「科学技術と社会」, 東京大学, AIPセンター.
- 武田英明： 人工知能の倫理をめぐる活動と学会の役割 公募シンポジウム　科学技術と社会：人工知 割を中心に, 日本心理学会第83回大会, 立命館大学, 大阪府 (2019), 日本心理学会.

学会口頭発表　Presentation

- S. Joo, H. Takeda, A. Takezaki and T. Yoshida: The update of Japanese agriculture ontologi (CVO) in Interest Group on Agricultural Data (IGAD) Pre-Meeting of the Research Data All Helsinki, Finland (2019).
- H. Takeda and Y. Murayama: Research Data Utilization Forum (RDUF) --- For discussion & problems in Open Science and Data Sharing in Poster, 14th Plenary Meeting, Helsinki, Finl Alliance (RDA).
- 朱成敏, 武田英明, 竹崎あかね, 吉田智一： 農業オントロジーを用いた営農記事における農作業と農 2019年度年次大会, 東京 (2019).
- 竹崎あかね, 前川薫, 朱成敏, 武田英明, 吉田智一： 農作業基本オントロジーに基づく生産者の作業 率化 農業情報学会 2019年度年次大会, 東京 (2019).
- 飯野なみ, 西村拓一, 福田賢一郎, 武田英明： ギター奏法知識におけるオントロジーと手続き的知識 2019年度人工知能学会全国大会(第33回), No. 1K3-J-4-01, 新潟 (2019), 人工知能学会.
- 朱成敏, 武田英明, 竹崎あかね, 吉田智一： 農業ナレッジグラフを用いた営農記事からの農作物の関 会全国大会(第33回), No. 1F4-OS-17b-02, 新潟 (2019), 人工知能学会.
- 竹崎あかね, 前山薫, 朱成敏, 武田英明, 吉田智一： 経営指標を利用した農作業基本オントロジーに基 2019年度人工知能学会全国大会(第33回), No. 1F4-OS-17b-01, 新潟 (2019), 人工知能学会.
- 西中美和, 武田英明, 白肌邦生, 木下裕介, 増田央： 未来を共創するためのフューチャー・プロトタイ 人工知能学会全国大会(第33回), No. 2I3-OS-15a-01, 新潟 (2019), 人工知能学会.
- 朱成敏, 岡田忠, 武田英明： 職業情報からの職業間の関連性の発見, セマンティックウェブとオント pp. 1-11 (2019).
- 飯野なみ, 浜中雅俊, 西村拓一, 武田英明： 演奏技法に着目した楽曲分析-ギター奏法オントロジーを 会(MUS)研究報告, Vol. 2019-MUS-124, No. 13, pp. 1-6 (2019).

Statistical data of JaLC

Language Code	# of content	Ratio
ja	4,920,585	36.7%
unk	4,443,716	33.2%
en	4,020,832	30.0%
de	2,439	0.0%
fr	1,351	0.0%
zh	295	0.0%
ru	207	0.0%
la	55	0.0%
es	47	0.0%
ko	39	0.0%
it	36	0.0%
sv	27	0.0%
vi	27	0.0%
da	23	0.0%
sw	15	0.0%
lb	13	0.0%
co	12	0.0%

ja+unk : en = 2:1

el	11	0.0%
id	11	0.0%
pt	11	0.0%
hi	10	0.0%
hu	10	0.0%
ar	10	0.0%
eo	9	0.0%
pl	8	0.0%
nl	7	0.0%
mi	7	0.0%
ur	7	0.0%
th	7	0.0%
tr	6	0.0%
ms	6	0.0%
my	5	0.0%
sn	5	0.0%
eu	4	0.0%

Statistical data of JaLC

Site ID	lang_cd	# of content
SI/JST.JSTAGE	en	3599360
SI/JST.JSTAGE	ja	3589636
SI/NDL.NDL.Search	unk	2966132
SI/JST.JSTAGE	unk	1094454
SI/JAMAS	ja	573765
SI/NII.JAIRO	ja	419474
SI/NII.JAIRO	unk	383102
SI/NIJL	ja	182638
SI/NII.JAIRO	en	138972
SI/JST.NBDC.GlyCosmos	ja	120342
SI/JST.NBDC.GlyCosmos	en	120342
SI/JAMAS	en	106320
SI/SANBI	en	15572
SI/JAEA.JOPSS	ja	11091
SI/JAEA.JOPSS	en	11091
SI/DBCLS	ja	5504
SI/ZSOJ	en	5494
SI/ZSOJ	ja	4601
SI/ICIC	en	4008
SI/JAMSTEC.DC	en	2744
SI/MYU.SAM	en	2615
SI/NII.JAIRO	de	2289

J-Stage: Journal Platform

ja+unk : en = 10:7

IRDB(JAIRO): Aggregation of Institutional Repositories

ja+unk : en = 6:1

JA/EN distribution in J-Stage [JST]

- J-Stage is the most popular Journal publishing platform in Japan

- Japanese scholarly societies use it for their publication
  - They mainly publish Japanese journals
  - Japanese scholars also use international journals published by international publishers

- This categories for a journal title are multiple (av. 5)

Journal domain	# of title	JA	EN	Mix	J+M	J+M/#J
Literature, Language & Linguistics and Art	396	145	37	214	359	90.66%
Psychology, Education	711	336	70	305	641	90.15%
Law, Political Sciences	313	145	34	134	279	89.14%
Philosophy, Religion	274	117	30	127	244	89.05%
Sociology	587	257	69	261	518	88.25%
Anthropology, History and Geography	441	181	59	201	382	86.62%
Economics, Business & Management	496	206	68	222	428	86.29%
Architecture and Civil Engineering	495	142	89	264	406	82.02%
General Medicine, Social Medicine, and Nursing Sciences	873	349	164	360	709	81.21%
Clinical Medicine	793	311	151	331	642	80.96%
Environmental Sciences	358	112	69	177	289	80.73%
Agriculture and Food Sciences	771	247	156	368	615	79.77%
Earth Sciences and Astronomy	341	100	71	170	270	79.18%
Interdisciplinary Sciences	832	266	179	387	653	78.49%
Engineering in General	709	195	162	352	547	77.15%
Information Sciences	618	194	148	276	470	76.05%
Chemistry	458	130	110	218	348	75.98%
Biology, Life Sciences and Basic Medicine	1056	304	260	492	796	75.38%
Electrical and Electronic Engineering	394	128	99	167	295	74.87%
Mechanical Engineering	421	140	107	174	314	74.58%
Pharmaceutical Sciences	474	134	124	216	350	73.84%
Nanosciences and Materials Sciences	479	145	126	208	353	73.70%
Dentistry	361	106	97	158	264	73.13%
Physics	378	108	105	165	273	72.22%
Mathematics	176	48	61	67	115	65.34%
Total:	3118					83.80%

IRDB(Institutional Repositories DataBase) [NII]

- Aggregation of Institutional Repositories in Japan
  - 772 IRs

total number	fulltext(rate)	number of DOI (rate)
3,841,382	2,842,226 (73.99 %)	812,983 (21.16 %)

Number of contents by resource type

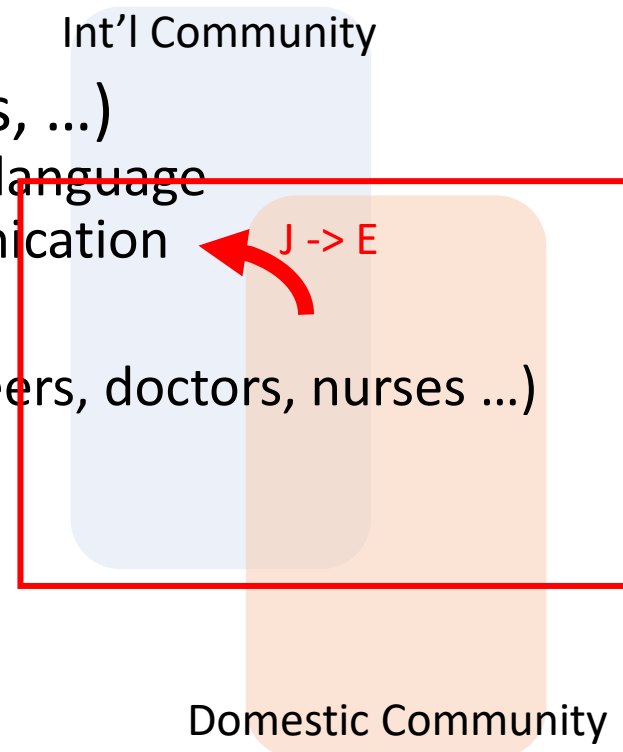|	
departmental bulletin paper	1,589,430
journal article	593,451
other	414,369
article	220,626
conference paper	197,366
research report	196,577
thesis	173,078
doctoral thesis	148,066
dataset	89,154
conference object	74,108
book	61,898
technical report	58,394
learning object	11,559

Departmental bulletin:
A periodical publication edited and published by departments of universities

Bilingual metadata

- Publication in Japanese often have English metadata in addition to Japanese metadata
  - Introducing activities in Japanese scholarly community to English community
  - Distinction of primary and secondary metadata

Scholarly activities in Japan

- Mixture of domestic and international activities
  - Difference by disciplines

- Natural Science (mathematics, physics, ...)
  - English is the major scholarly publishing language
  - Japanese is mainly for domestic communication

- Engineering, medicine, agriculture ...
  - Large population of practitioners (engineers, doctors, nurses ...)
  - Both Japanese and English are used

- Social science and literature
  - Main language is Japanese
  - Various languages are also used

Int'l Community

J -> E

Domestic Community

ギター奏法知識におけるオントロジーと手続き的知識の併用による知識の構造化

Knowledge-Structuring by using an Ontology and Procedural Knowledge in Guitar Performance Knowledge

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理化学研究所
RIKEN (Institute of Physical and Chemical Research)

国立情報学研究所
National Institute of Informatics

This paper discusses the knowledge-structuring an otology and procedural knowledge in guitar performance knowledge. We have attempted to collect and systematize the on-site knowledge on musical instrument performance for playing support. We focused on classical guitar which requires many techniques, and developed the Guitar Rendition Ontology. However, the knowledge is complicated, making it difficult to understand for domain experts. In this study, we designed a process for knowledge-structuring by using Guitar Rendition Ontology and procedural knowledge, and clarified the requirements and technologies look for in ontology experts and domain experts. In addition, we confirmed the usefulness of the process by questionnaire to domain experts.

1. はじめに

社会活動の多様化に伴い，専門分野の知識の適切な理解が，求められている．人工知能における知識工学の分野ではこの要請に答えるべく多くの領域オントロジーが構築されている．領域オントロジーは，分野の専門家の能力を拡張するだけでなく，横断的な利活用によって広範な知識の理解が可能となる．それは，社会活動の参画を促進し，生産性を高めることに繋がる．

しかしながら，領域オントロジーを構築するためにはいくつかの問題が存在する．まず，オントロジーを専門としない人にも理

づいて処理を行ったのかを客観的に理解することが重要である．CHARM（Convincing Human Action Rationalized Model）は，目的を明示的に記述しそのための代替方式を提示する人間行動モデルであり[Nishimura 13]，看護教育において実践的に適用された実績を持っている[西村 15]．このような分野の専門家にとって理解しやすい目的指向のモデルを活用し，領域オントロジーと連携することができれば，人間可読と機械可読の双方の向上に寄与すると考えられる．

そこで本稿では，ギター演奏に関する知識の構築におけるオントロジーと手続き的知識の併用による知識の構造化プロセス

JaLC metadata for multiple languages

- Journal Metadata items allowing multiple language values
  - Title
  - Creator
  - Affiliation
  - Abstract
  - Keyword

Statistical data of JaLC

# of registration	# of content
1	6,997,923
2	3,193,662
3	1,556

Language Code	# of content	Ratio
ja	4,920,585	36.7%
unk	4,443,716	33.2%
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es	47	0.0%
ko	39	0.0%
it	36	0.0%
sv	27	0.0%
vi	27	0.0%
da	23	0.0%
sw	15	0.0%
lb	13	0.0%
co	12	0.0%

el	11	0.0%
id	11	0.0%
pt	11	0.0%
hi	10	0.0%
hu	10	0.0%
ar	10	0.0%
eo	9	0.0%
pl	8	0.0%
nl	7	0.0%
mi	7	0.0%
ur	7	0.0%
th	7	0.0%
tr	6	0.0%
ms	6	0.0%
my	5	0.0%
sn	5	0.0%
eu	4	0.0%

Multiple language metadata in J-Stage

Title Language	Only Japanese	Japanese and English	Only English	Nothing	Total
Total	34%	51%	14%	0%	100%
English Journal	1%	8%	91%	0%	14%
Mixed Journal	36%	60%	4%	0%	36%
Japanese Journal	43%	56%	1%	0%	46%
Misc.	30%	66%	4%	0%	4%

Issues for bilingual metadata

- System Issues
  - Treatment of multiple data values by language
    - Once it was the serious problem
      - CrossRef metadata in the past
    - Now most systems can treat them
  - Search
    - Single language or mixed?
  - Mapping between systems
    - Difference of primary language
      - DataCite Case

Issues for bilingual metadata

- Semantic Issues
  - Relationship to Content Language
    - What means metadata in English for content in Japanese?
      - Just translation or something more
  - Authors' intension
    - How much do they want to deliver their content to audience in English?
    - How do they want to express metadata?
      - e.g., expression of name (local name or English name)

ORCiD

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Search...

iD

https://orcid.org/
0000-0002-2909-7163

Is this you? Sign in to start editing

Printable version

Published name
Hideaki Takeda

Name
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Also known as
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Websites & social links >

Personal Web Page

Other IDs >

Researcher Name Resolver ID: 1000080252831

Scopus Author ID: 55437906200

Scopus Author ID: 7403064748

ResearcherID: C-4956-2008

Scopus Author ID: 56369396700

Countries >

Japan

Activities   Collapse all

∨ **Employment (5)**   ≡ Sort

National Institute of Informatics: Tokyo, JP

2003-05-01 to present | Professor   Show more detail
Employment

Source: Hideaki Takeda

National Institute of Informatics: Tokyo, JP

2000-04-01 to 2003-04-30 | Associate Professor   Show more detail
Employment

Source: Hideaki Takeda

Nara Institute of Science and Technology: Ikoma, JP

1995-04 to 2000-03 | Associate Professor   Show more detail
Employment

Source: Hideaki Takeda

Emerging issues

- Automatic translation is coming
  - Access content as well as metadata via automatic translation

- New issues
  - Accuracy of translation
    - Risk of misunderstanding
  - Authorization of translation
    - Formal or informal translation
  - Willingness of translation
    - Authors' expectation
    - Risk of unexpected audience
      - e.g., ethical issues

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Search...   🔍

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https://orcid.org/
0000-0002-2909-7163

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Published name
Hideaki Takeda

Emails ⟩	Name
	Hideaki Takeda

takeda@nii.ac.jp

Also known as
武田英明   ⟩

Websites & social links ⟩

Personal Web Page

Activities   Expand all

⟩ **Employment (5)**	☰ Sort

Other IDs ⟩

Researcher Name Resolver ID: 1000080252831

⟩ **Education and qualifications (3)**	☰ Sort

Scopus Author ID: 55437906200

Scopus Author ID: 7403064748

⌄ **Funding (19)**	☰ Sort

ResearcherID: C-4956-2008

Scopus Author ID: 56369396700

Research on Modeling and support of emergent creative activities through the Internet

2012-04-01 to 2016-03-31 | Grant   Show more detail
Japan Society for the Promotion of Science (Tokyo, JP)
URL: https://grants.uberresearch.com/501100001691/24240014/Research-on-Modeling-and-support-of-emergent-creative-activities-through-the-Internet
GRANT_NUMBER: 24240014

Countries ⟩

Source: Hideaki Takeda *via* DimensionsWizard

Japan

Study on the creative distribution of metadata

2009-01-01 to 2010-12-31 | Grant   Show more detail
Japan Society for the Promotion of Science (Tokyo, JP)
URL: https://grants.uberresearch.com/501100001691/21013045/Study-on-the-creative-distribution-of-metadata
GRANT_NUMBER: 21013045

Source: Hideaki Takeda *via* DimensionsWizard

Summary

- Multilingual metadata and content exist in some disciplines in scholarly publishing in Japan
  - So how is in other languages? Similar or different?
- Metadata may be two or more by language for a single publication
  - Some issues exist but not so serious
- Introduction of automatic translation will cause some change of academic culture
  - The big wall is falling down
  - Some will express welcome but some complain for the change