



MEXT Grant-in-Aid for  
Grant-in-Aid for Scientific Research (S)

# Ecological future making of childrearing in contact zones between hunter-gatherers and agro-pastoralists in Africa

## ANNUAL REPORT 2022



Caregiver Child Interaction

# From the Principal Investigator

## Looking Back on FY2022

Akira Takada

Graduate School of Asian and  
African Area Studies, Kyoto University



I am pleased to present the annual report for FY2022, the first year of Grant-in-Aid for Scientific Research S "**Building an Ecological Future for Child Rearing in the Contact Zone of African Hunter-Gatherers and Agro-pastoralists**". This research project takes on the challenge of the "crisis of child rearing" that has become so often voiced in recent years. Many of the crises of modern society have been encompassed by modernity, and when confronted with them, we often look back to hunter-gatherers. In the late 18th century, Rousseau envisioned the "natural man," or man in his natural state, living autonomously in small groups with little inequality. reminiscent of these naturalists. Such research has been reflected in the images of humans that form the basis of modern society. Since then, however, research has made significant progress, revealing a picture of hunter-gatherer societies that does not necessarily fit the earlier reports. It is now essential to get out of the palm of Rousseau's hand and elucidate the formation process of cultural diversity of hunter-gatherer societies in relation to the ecological environment, surrounding ethnic groups, nations, and other social institutions. From this perspective, this research project will conduct action research in Botswana, Namibia, and Cameroon, where Japan has a world-class record of research on hunter-gatherer societies, and, based on the analysis of video materials obtained, will explore the physical dispositions that produce habitus, or cultural actions and thoughts, in hunter-gatherer societies, and the microhabitats surrounding them. Based on the analysis of the video materials obtained, we will clarify the process of mutual construction of microhabitats, i.e., familiar behavioral, linguistic, and institutional environments, surrounding the habitus. In this way, we aim to understand the link between social transformation and socialization theoretically, and to construct a better future for children who are now being socialized practically. Through the progress of this research project, we aim to re-found the humanities and social sciences and learn together with the societies and people of Africa, which has been experiencing remarkable growth in recent years.

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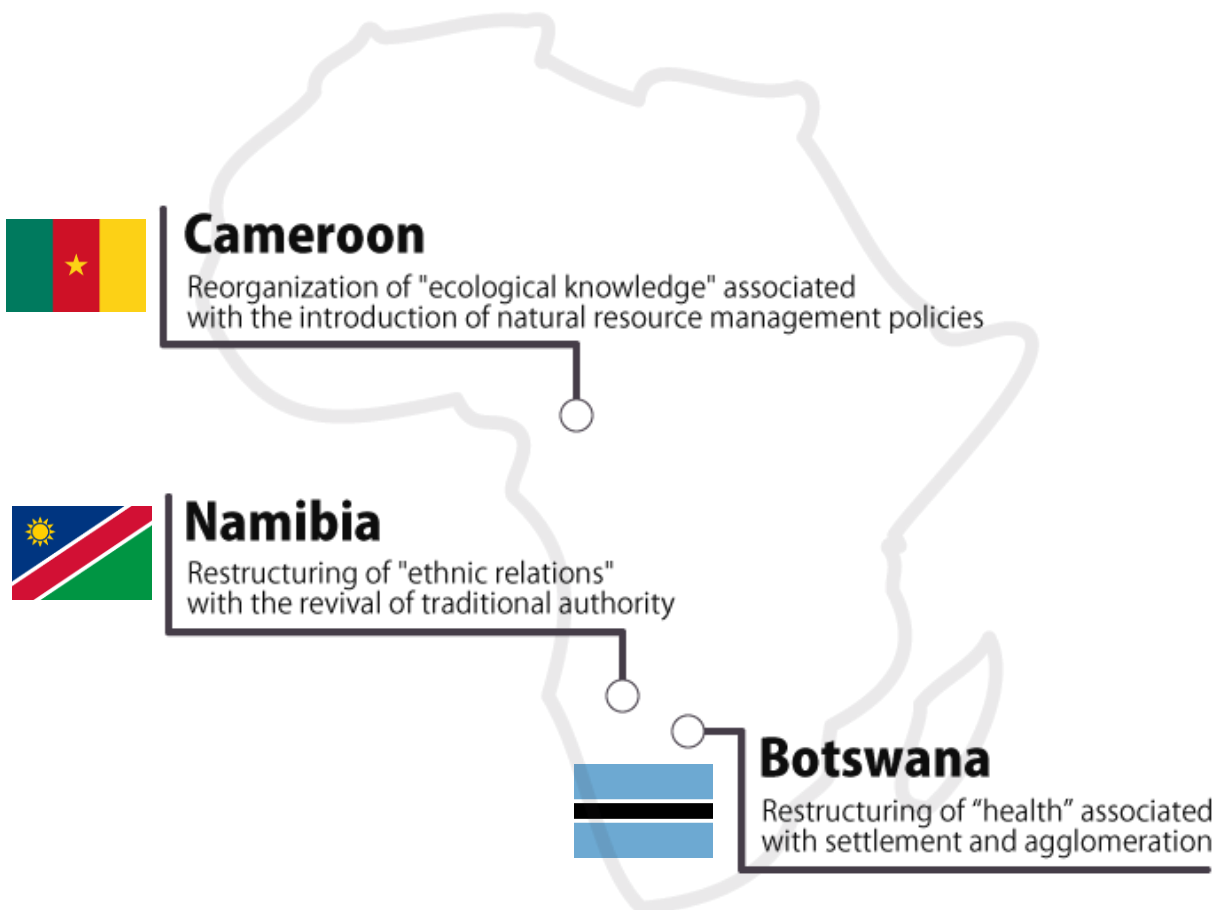
# Research Summary

## About

### Ecological Future making of Childrearing in contact zones between hunter-gatherers and agro-pastoralists in Africa

In this study, we collected and analyzed data on caregiver-child (birth to 5 years old) interactions in three regions that have served as contact zones between hunter-gatherers and agro-pastoralists in Africa (Botswana, Namibia, and Cameroon). We will clarify the processes of socialization of behavior, embodiment of language, and internalization of institutions, as well as the processes of reorganization of behavioral, linguistic, and institutional environments that accompany these processes. Furthermore, based on the results of these analyses, we will support children who are socializing in an ever-changing society to mutually construct new microhabitats and habitus for a better future.

In the main research area, the following issues will be specifically addressed



# Research Summary

## Purpose

Based on previous research (e.g., Takada 2020), this study aims to examine the connections between the subject, others, culture, and environment in the early years of life (0-5 years old) through Caregiver-Child Interaction (CCI), which is the process by which habitus and microhabitats (structured places that enable interactions; Ochs et al. 2005) are mutually constructed.

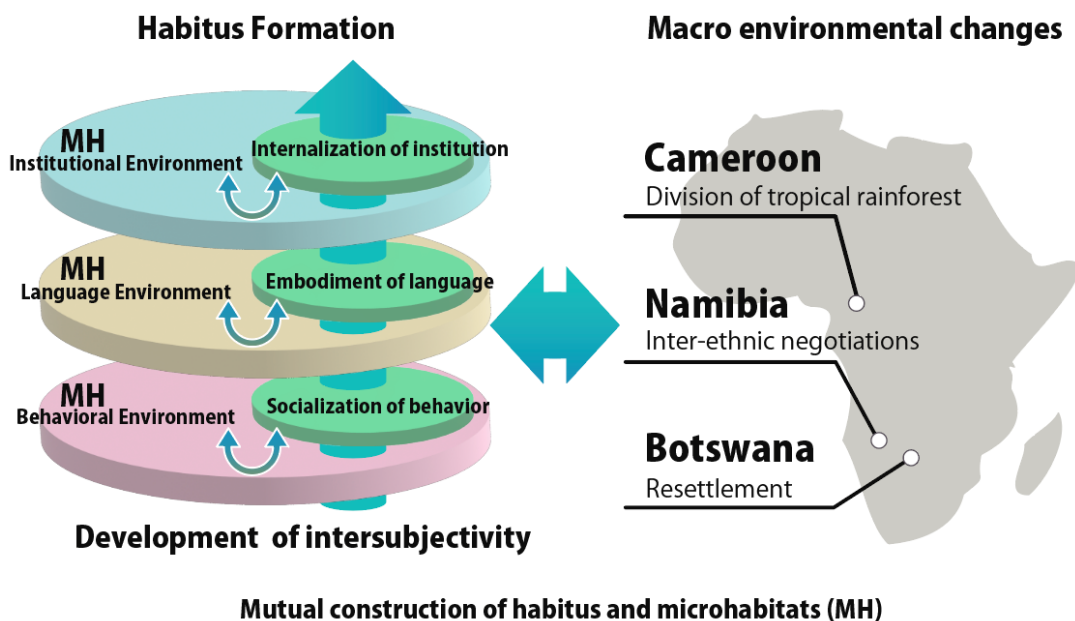
Infants form habitus by developing intersubjectivity. In this process, they socialize their innate behaviors to suit their culture (socialization of behavior), internalize and master the language spoken by others (embodiment of language), and internalize external institutions to discipline themselves and society (internalization of institutions).

The corresponding behavioral, linguistic, and institutional environments constitute microhabitats. Habitus and microhabitats interact in a cyclical manner, which is reorganized when macro environmental changes occur.

Following that model, this study will conduct action research in Botswana, Namibia, and Cameroon as the main research areas. The aim is to understand the link between social change and socialization in theory, and in practice, to support the mutual construction of habitus and microhabitat for a better future for children who are being socialized.

## References

- Takada, A. 2020. *The ecology of playful childhood: Caregiver-child interactions among the San of southern Africa*, Palgrave Macmillan.
- Ochs, E., Solomon, O., Sterponi, L. 2005. Limitations and Transformations of Habitus in Child-Directed Communication, *Discourse Studies* 7(4-5), 547-583.



# Research Summary

## 3 Countries and Regions

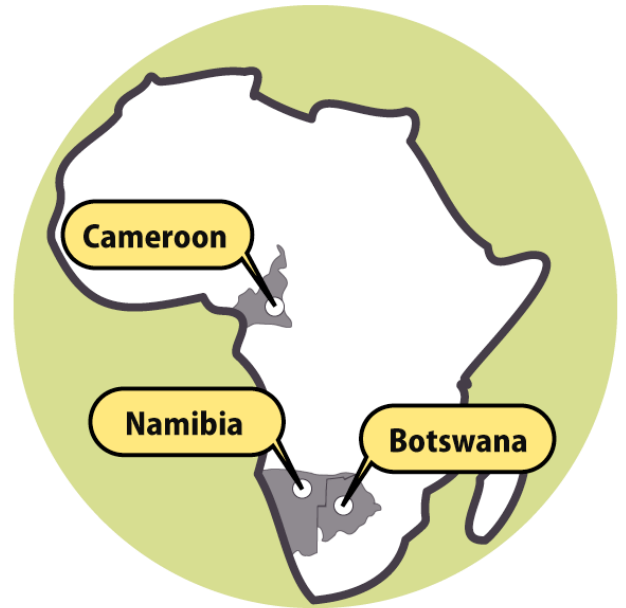
The three regions were selected for the following reasons,

(1) Africa is expected to undergo the greatest social changes of all the continents in the coming decades and is important for a global future building.

(2) The three regions cover a wide range of climatic environments: desert-steppe (Botswana), steppe-savanna (Namibia), and savanna-tropical rainforest (Cameroon).

(3) All three regions are contact zones between hunter-gatherers and agro-pastoralists (Pratt 2007), which is important for discussing the negotiation, integration and development of diverse natural views, livelihoods and cultures (e.g. Descola 2005).

(4) In all three areas, social relationships between the representatives and the various actors involved in CCI (e.g., traditional authorities, government agencies, NGOs, hospitals, and local research institutions), which are necessary for the promotion of this study, were established in the course of the ongoing research by the representatives, facilitating an understanding of the social situation and a medium- to long-term perspective on these issues.



## References

Pratt, M. L. 2007. *Imperial eyes: Travel writing and transculturation*. Routledge.

Descola, P. 2005. *Par-delà nature et culture*, Gallimard.

Descola, P. 2013. *Beyond Nature and Culture*, The Univ of Chicago Press.





# Research Summary

## Expected Results and Significance

- Overcome the weaknesses of developmental research based on methodological individualism through a microscopic analysis of CCI. Elucidate the interdependence of the developmental process of culturally mediated intersubjectivity and the process of modification of cultural frameworks and environments through action.
- The communication research of the principal investigators has been integrated and developed from an ecological perspective to comprehensively theorize the origins of sociality. And we will develop and establish an academic field that bridges anthropology, psychology, linguistics, sociology, economics, and other fields.
- To help build a better future by presenting creative options for resolving social conflicts associated with macro-environmental changes in the three areas. We will study with African societies that have faced various difficulties from early on, but are still growing rapidly.



# Research Themes and Members (1)

## Socialization of behavior and reorganization of the behavioral environment

Caregivers intersubjectively regulate the regularity of children's behavior from birth (Malloch & Trevarthen 2009) and socialize their behavior. In the process, children acquire behaviors that reflect the history and culture of their society, while at the same time updating and revising their historical-cultural framework.

### References

Malloch, S., & Trevarthen, C. (Eds.). 2009. Communicative musicality: Exploring the basis of human companionship, Oxford University Press.

### Research Areas and Issues / Contents

Botswana: Reorganization of "Health" in the context of sedentarization and population concentration (Resettlement) / Transformation of Children's Hygiene Behavior

Namibia: Restructuring of "Inter-ethnic Relations" with the revival of traditional authority (Inter-ethnic negotiations) / Dietary changes due to agricultural and weaning recommendations

Cameroon: Restructuring of "Ecological Knowledge" with the introduction of natural resource management policies (Division of tropical rainforest) / Temporary childcare and multi-person care during subsistence activities

### Core member

#### Co-Investigators

**Taro Yamauchi** (Professor, Department of Health Sciences, School of Medicine, Hokkaido University)

: Human ecology, Global Health

**Kazuhide Hashiya** (Professor, Graduate School of Human-Environment Studies, Kyushu University)

: Comparative developmental psychology, Primatology

#### Collaborating Researchers

**Hidenori Harada** (Associate Professor, ASAFAS, Kyoto University)

: Environmental Engineering, Public Health Engineering

**Yuichiro Fujioka** (Associate Professor, Graduate School of Integrated Sciences for Global Society, Kyushu University)

: Geography, Landscape Ecology



Yamauchi, T.



Hashiya, K.



Harada, H.



Fujioka, Y.



# Research Themes and Members (2)

## Embodiment of language and restructuring of language environment

Children embody historically and culturally constructed language using a variety of semiotic resources (Goodwin 2000), and as they become familiar with the various levels of language structure, they generate new knowledge and modify that structure.

### References

Goodwin, C. 2000. Action and embodiment within situated human interaction, *Journal of Pragmatics*, Vol.32 (10), 1489-1522.

### Research Areas and Issues / Contents

Botswana: Reorganization of “Health” in the context of sedentarization and population concentration (Resettlement) / Effectiveness of health education using storytelling

Namibia: Restructuring of “Inter-ethnic Relations” with the revival of traditional authority (Inter-ethnic negotiations) / Analysis of Multilingual Use in Early Childhood Education

Cameroon: Restructuring of “Ecological Knowledge” with the introduction of natural resource management policies (Division of tropical rainforest) / Class work of traditional knowledge and children’s EK acquisition

### Core member

#### Co-Investigators

**Hiroshi Nakagawa** (Professor, Institute of Global Studies, Tokyo University of Foreign Studies)

: Khoisan linguistics, Phonology, Phonetics

**Hirokazu Yasuoka** (Associate Professor, ASAFAS, Kyoto University)

: Ecological anthropology, Historical Ecology, Ethnobiology

#### Collaborating Researchers

**Noriko Toyama** (Professor, Faculty of Human Sciences, Waseda University)

: Educational psychology

**Tomoko Endo** (Associate Professor, Graduate School of Arts and Sciences, The University of Tokyo)

: Interactional Linguistics, Child-caregiver interaction

**Tomoyo Takagi** (Professor, Faculty of Humanities and Social Sciences, University of Tsukuba)

: Conversation Analysis, Ethnomethodology



Nakagawa, H.



Yasuoka, H.



Toyama, N.



Endo, S.



Takagi, T.



# Research Themes and Members (3)

## Internalization of institution and restructuring of institutional environment

Children internalize historically and culturally shaped institutions by being respected by others, but when they do not receive appropriate respect, they attempt to change the institutions themselves through the struggle for recognition (Honneth 1996).

### References

Honneth, A. 1996. The Struggle for Recognition: The Moral Grammar of Social Conflicts, MIT Press.

### Research Areas and Issues / Contents

Botswana: Reorganization of “Health” in the context of sedentarization and population concentration (Resettlement) / Generational differences in health concepts associated with the introduction of modernization policies

Namibia: Restructuring of “Inter-ethnic Relations” with the revival of traditional authority (Inter-ethnic negotiations) / Identity reorganization associated with the promotion of traditional culture

Cameroon: Restructuring of “Ecological Knowledge” with the introduction of natural resource management policies (Division of tropical rainforest) / Welfare policy and conventional child rearing and care for children with disabilities

### Core member

#### Co-Investigators

**Matthew Burdelski** (Professor, Graduate School of Letters, Osaka University)

: Conversation analysis, Language socialization

**Michie Kawashima** (Professor, Faculty of International Relations, Kyoto Sangyo University)

: Intercultural Communication, Medical Sociology

#### Collaborating Researchers

**Mikako Toda** (Assistant Professor, Faculty of Integrated Global Studies, Sophia University)

: Ecological anthropology, Disability studies

**Katsuya Takanashi** (Professor, School of Human Cultures, University of Shiga Prefecture)

: Communication Science, Body Movement Science



Burdelski, M.



Kawashima, M.



Toda, M.



Takanashi, K.



## **BOTSWANA**

### **Reorganization of “Health” in the context of sedentarization and population concentration (Resettlement)**

Botswana has a history of overcoming the HIV epidemic and now, like other countries, faces the Corona pandemic. The main focus of this study is on the hunter-gatherers G|ui and G||ana (a subgroups of the San) and Bantu agro-pastoralists Kalahari and Tswana.

The G|ui and G||ana have long been migratory hunter-gatherers in the Kalahari Desert, but since the 1990s they have experienced rapid settlement and agglomeration, as well as changes in their relationship with the Kalahari and Tswana, due to government resettlement policies. In this study, we will focus on the process of reorganization of life practices and concepts of health in G|ui and G||ana, and from FY2022, in collaboration with Kyoto University and the University of Botswana, where the MoU is located, we will conduct action research (e.g., additional restrooms, introduction of health classes, promotion of health checkups) on child health promotion in a kindergarten in New Xade village, central Botswana, and observe children in their daily lives.



Photo. The New Xade Village



Photo. University of Botswana

## **NAMIBIA**

### **Restructuring of “Inter-ethnic Relations” with the revival of traditional authority (Inter-ethnic negotiations)**

North-central Namibia, considered a marginal area for conventional agriculture due to rainfall and other constraints, has been actively negotiated with the post-hunter-gatherer groups called !Xun , †Akhoe (a subgroups of San) and the Bantu agro-pastoralist group called Ovambo for several centuries. Furthermore, since Namibia's independence in 1990, the government has revived the Ovambo's traditional authority and strengthened the integration of local communities (Takada 2015).

# Research Areas

In collaboration with the University of Namibia, which is promoting cotutelle, we will conduct action research (e.g., encourage weaning, introduce language classes earlier, promote local traditional culture) to promote inter-ethnic exchanges among children and observe them in their daily lives at a kindergarten in the village of Ekoka in north-central Namibia from fiscal year 2022.

## Reference

Takada, A. 2015. *Narratives on San ethnicity: The cultural and ecological foundations of lifeworld among the !Xun of north-central Namibia*, Kyoto University Press & Trans Pacific Press.



Photo. University of Namibia.



Photo. Himba society, Northern arid region of Namibia.



Photo. A Baka girl holds an infant under observation during a scavenging operation, southeastern Cameroon.

## CAMEROON

### **Restructuring of “Ecological Knowledge” with the introduction of natural resource management policies (Division of tropical rainforest)**

In Cameroon, our main research interests are the Baka hunter-gatherers (a subgroup of pygmies) and the Bakwere and the Konabembe, neighboring Bantu agricultural communities what we had called. While large-scale tropical deforestation continues in this region, many projects are being promoted to conserve biodiversity. Therefore, this study focuses on the process of restructuring ecological knowledge with the introduction of natural resource management policies. We will conduct action research (e.g., temporary care during livelihood activities, classroom teaching of traditional knowledge, structuring living environments suited to each child with disabilities) to promote the reactivation of ecological knowledge acquisition and observe it in daily life at a field station established by Kyoto University in southeastern Cameroon from FY2022.



# Overseas Dispatch

- Akira Takada (Professor, Kyoto University) Botswana, Namibia, South Africa (2022/09/24 - 12/15): New Xade village (Botswana), Ekoka village (Namibia) etc. for research and the Book Launch to celebrate the publication at Windhoek.
- Koji Hayashi (Research Fellow, Kyoto University) Botswana, South Africa (2022/9/24 - 10/02) : Research meeting at the University of Botswana etc.
- Shino Yamamoto (Graduate Student , Kyoto University) Namibia (2022/11/2 - 2023/1/26): Pre-research in Himba society etc.
- Koji Hayashi (Research Fellow, Kyoto University) Namibia (2022/11/4 - 13) : Research meeting at the University of Namibia etc.
- Akira Takada (Professor, Kyoto University) Cameroon (2023/02/11 - 23) : Research meeting at the University of Yaoundé I etc.
- Koji Hayashi (Research Fellow, Kyoto University) Cameroon (2022/8/25 - 9/10, 2023/02/04 - 03/14): Research and research meeting at Yaoundé, Bertoua, Lomié
- Akira Takada (Professor, Kyoto University) Ireland (2022/06/25 - 07/02): International conference (CHAGS13)
- Akira Takada (Professor, Kyoto University) ) U.S.A (2022/12/27 - 2023/01/15) : Research meeting at CLIC, UCLA, UCSD etc.
- Michie Kawashima (Associate Professor, Kyoto Sangyo University) U.S.A (2022/12/27 - 2023/01/5): Research meeting at UCLA, UCSD etc.
- Risa Teramoto (Graduate Student , Kyoto University) ) U.S.A (2023/1/5 - 2023/03/17) : Research meeting at UCLA etc.
- Tomoe Noguchi (Graduate Student , Kyoto University) Norway (2023/03/26 - 04/02): International workshop “Contemporary hunter-gatherers and education in a changing world”



Please check our website for more details!



Photo. The Book Launch Speech, “*Hunters among farmers: The !Xun of Ekoka*” (Takada,2022). (at Windhoek, Namibia)



Photo. Research meeting with Antoine Socpa, University of Yaoundé I and his colleagues. (at Yaoundé, Cameroon)



Photo. International workshop of “Contemporary hunter-gatherers and education in a changing world: Towards sustainable futures” (at Tromsø, Norway)

# Achievements (1)

## Academic Articles

高田 明. 2023. 音楽的社会化への相互行為の人類学的アプローチ, 『音楽教育学』 52(2), pp.34-41.

高田 明. 2022. 意味の振る舞い、言語使用、文化『特集：子どものことば、再発見！ 季刊誌「発達」』 172, pp.38-43.

Fujioka, Y. 2023. Classification of Daily Food Sets in an Agro-Pastoral Society in North-Central Namibia: A Comparison of Cluster Analysis and Two-Way Indicator Species Analysis. *African Study Monographs, Supplementary Issue*, 61, pp.187-203.

Yamauchi, T., Hayashi, K., Sai, A. 2023. Co-creation of Water, Sanitation, and Hygiene in Local Communities with NGOs during the COVID-19 Pandemic: From Hunter-gatherers to Urban Dwellers in Cameroon. *Sanitation*, 7 (1), pp.1-6.

藤岡 悠一郎. 2022. ナミビア北中部農牧社会における新農法導入にともなう在来知と農業実践の変化-SATREPS プロジェクトを事例に, 『アフリカ研究』 101, pp.21-34.

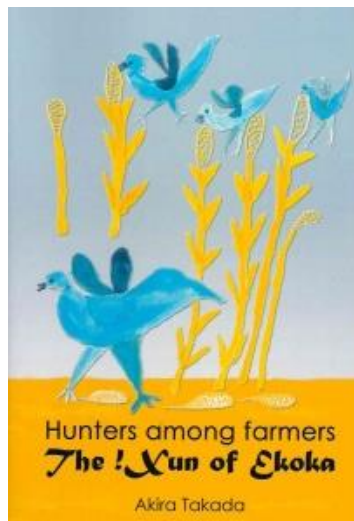
Abe, T., Nishiyama, J., Kushida, S., Kawashima, M., Ohishi, N., Ueda, K. 2023. Tailored opening questions to the context of using medical questionnaires: Qualitative analysis in first-visit consultations, *Journal of General and Family Medicine* (2), pp.79-86.

## Publications

高田 明. 2022. 『狩猟採集社会の子育て論：クン・サンの子どもの社会化と養育行動』 京都大学学術出版会.

Takada, A. 2022. *Hunters among farmers: The !Xun of Ekoka*. University of Namibia Press.

原田英典・山内太郎 (編著). 2023. 『講座サニテーション学4 サニテーションと健康』 北海道大学出版会.





# Achievements (2)

## Publications (Contribution writings)

**Takada, A.** 2022. Families(Chapter 21), Church, A. & Bateman, A. (Eds.), *Talking with children : A handbook for early childhood education*. Cambridge University Press, pp.426-444.

**高田 明.** 2023. 教育・学習の基盤としての進化と文化, 安藤寿康(編)『教育の起源を探る: 進化と文化の視点から』ちとせプレス, pp.175-189.

**橋彌和秀.** 2023. 「教える」と「教わる」のあいだ, 安藤寿康(編)『教育の起源を探る: 進化と文化の視点から』ちとせプレス, pp.43-63.

**川島 理恵.** 2023. 意思決定過程における感情表出について (13章), 小宮友根・黒嶋智美(編)『実践の論理を描く』勁草書房.



## Presentations at a conference etc. (International)

**Takada, A.** 2022. Four approaches to the analysis of gymnastic behaviors among the San of southern Africa. Paper presented at the panel "Four approaches to studying childrearing among hunter-gatherers", *The 13th Conference on Hunting and Gathering Societies(CHAGS13)*, University College Dublin, Dublin, Ireland, 27th June-1st July 2022.

**Yamauchi, T.** 2022. Childcare in hunter-gatherer societies: The meaning of alloparenting in which children are raised in groups. *The 13th Conference of Hunting and Gathering Societies(CHAGS13)*, University College Dublin, Dublin, Ireland, 27 June-1 July, 2022.

**Yamauchi, T.** 2022. How do hunter-gatherer children become adults in the forest?: Children's hunting and gathering activities. *The 15th International Congress of Physiological Anthropology*, The University of Oregon, Eugene, Oregon USA, 15-17 September, 2022.

**Nakagawa, H.** 2022. A phonesthetic vowel feature in G|ui. *KBA Riezlern 2022*, Riezlern, Austria. July 19 2022.

**Kawashima, K.**, Maeda, H., Kondo, A. 2022. Q-A sequences in prenatal genetic counseling in Japan; conversation analytic study of NIPT and NT consultations, *American Society of Human Genetics*, Oct. 2022.

Imai, M., Murai, C., Ohba, M., Hidaka, S., Okada, H., **Hashiya, K.** 2022. The contingency symmetry bias as a foundation of word learning: Evidence from 8-month-olds in a matching-to-sample task. *The 44th Annual Meeting of the Cognitive Science Society*, Toronto, Canada, 27-30 July, 2022.

Kishimoto, R., **Hashiya, K.** 2023. Reference assignment is dependent on temporal proximity and rarity bias, *BCCCD 2023*, Budapest, Hungary, 5-7 Jan. 2023.

Pratchett, L., Witzlack-Makarevich, A., Ammann, L., Auer, D., Fehn, A-M., Güldemann, T., Job, S., Lionnet, F., Naumann, C., Ono, H., **Nakagawa, H.** 2022. Typological features of Consonants in Khoisan languages of the Kalahari Basin Area, *Francois International Professorship Symposium*, Antwerp University, Belgium. 9 Dec. 2022.

# Achievements (3) / Project meeting, Seminar

## Presentations at a conference etc. (in Japan)

高田 明. 2022. 模倣の自然化: サンの相互行為の分析から, 日本アフリカ学会第59回学術大会

高田 明. 2022. 「自然人」の誕生: ヴィーコ, リンネ, ルソーを中心に, 日本文化人類学会第56回研究大会

高田 明. 2022. 労働市場と学校教育の非対称状況におけるソフトスキルと雇用可能性: アフリカにおけるソフトスキル訓練と開発, 国際開発学会第23回春季大会 (指定討論)

高田 明. 2022. 狩猟採集民の子育て研究への4アプローチ: クン・サンのジムナスティックの分析事例, 第76回日本人類学会大会・第38回日本霊長類学会大会連合大会

中川 裕. 2022. コイサン諸語のクリック子音の音韻分析: SPEと単一音素分析の系譜, 日本英語学会第40回大会, オンライン (招待講演)

橋彌和秀. 2022. 「こころ」という概念を「個体レベルでの社会的情報の圧縮システム」として考える, 社会性の起原と進化: 人類学と霊長類学の協働による人類進化理論の新開拓 第13回研究会, 東京外国語大学

## Project meeting, Seminar (in Japan)

1<sup>st</sup> project meeting (2022/6/14) Online

2<sup>nd</sup> project meeting (2022/9/13) Online

3<sup>rd</sup> project meeting (2023/1/25) Hybrid-Flexible

## CCI Data Session

第105回 (2022年7月22日) 発表者: 牧野 由紀子 (元・関西学院大学非常勤講師)

「片付け場面における行為指示/ 応答連鎖—CCIコーパス 2 歳児データから—」

第106回 (2022年8月5日) 発表者: 高田 明 (京都大学)

「CCI関西データに見る, 敬語による社会的距離の調整」

第107回 (2022年8月19日) 発表者: 森田 笑 (シンガポール国立大学)

「仲直りのプラクティス」

第108回 (2022年9月2日) 発表者: 川島 理恵 (京都産業大学)

「患者の泣きはどう対応するか」

## 子育ての生態学的未来構築コロキウム

### (Colloquium on Building the Ecological Future of Parenting)

(2023年1月25日) 対面+オンライン

第1回 「サニテーションからみるアフリカ狩猟採集民の未来」

< 講演1 > 山内 太郎 (北海道大学)

「狩猟採集社会の子どものライフスタイルと健康

—食と身体とWASH—」

< 講演2 > 林 耕次 (京都大学)

「狩猟採集民のサニテーション

—定住したバカ・ピグミーの現状と課題—」



# From the Secretariat / Editor's Postscript

## **From the headquarters of the project**

This project, which started in June 2022, is headed by Prof. Akira Takada, with Ms. Takako Nomura, Ms. Emi Nakayama, Ms. Yuko (Kawamoto) Ogawa, and Dr. Koji Hayashi as secretariat members. If you have any questions about the project, please feel free to contact us.

Starting in April 2023 FY, a new researcher, Dr. Yuriko Sugiyama, joined us as a new researcher, and invited researchers from overseas continue to visit us in Japan.

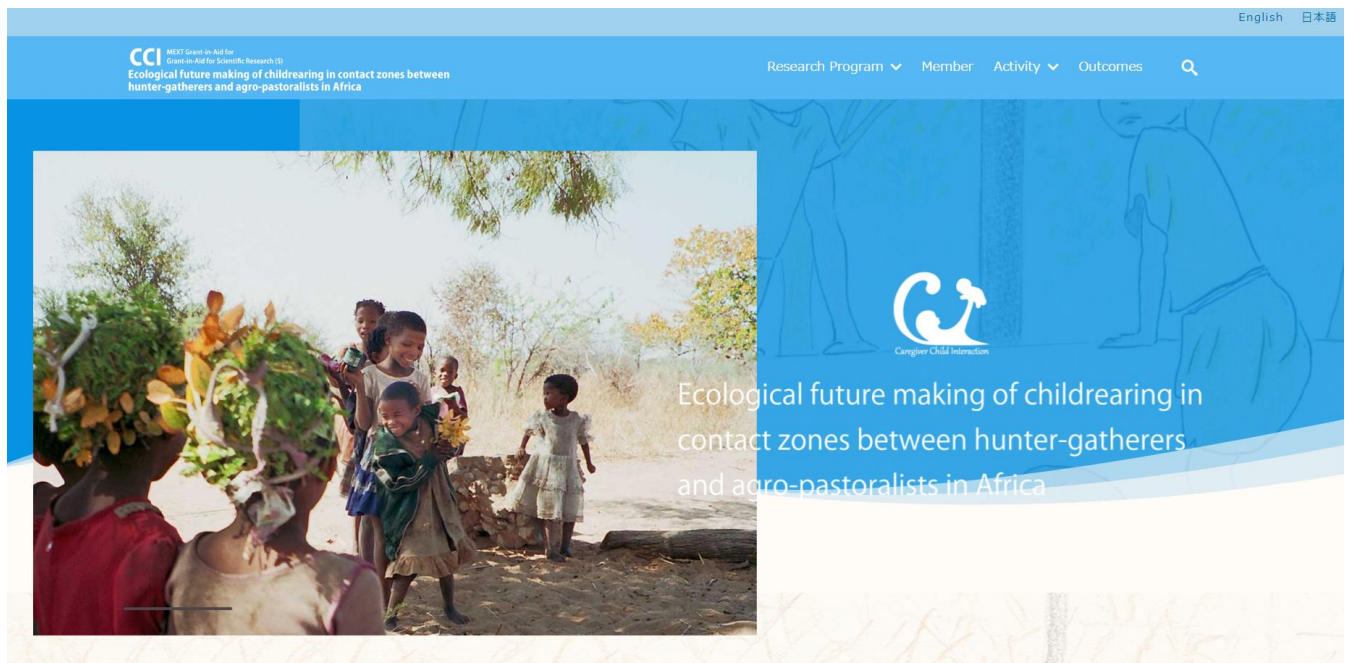
We are looking forward to your continued active participation in project-related events and activities!

## **The homepage is now open! \*Japanese and English (From August 9, 2022)**

<https://www.cci.jambo.africa.kyoto-u.ac.jp/efm/en/>



Homepage English Ver.



## **Editor's Postscript**

As this project started in June 2022, many of you may have resumed your research and meetings involving domestic and international travel for the first time in a while, as the restrictions on domestic and international travel due to the Corona disaster have just begun to ease. Nevertheless, some of the meetings, including the plenary sessions, as well as academic conferences and study groups, still continued to be held online, and it was regrettable that there were no opportunities for all the members to get together. With the start of the new fiscal year, I will support more and more activities and research related to the project, and will try to disseminate information about them as well (Hayashi).

## **2022FY ANNUAL REPORT \*English Version**

**Published: August 10, 2023**

**Edited and published by Akira Takada (Principal Investigator)**

**Contact : [cci.takada.lab@gmail.com](mailto:cci.takada.lab@gmail.com)**

