

Center for Cultural Research and Studies



Noriyuki Kikuchi
Professor



Koichi Hasegawa
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Hayato Karimazawa
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Yosuke Kira
Associate Professor

Summary of Achievement

Refereed academic journal

[nakazawa-401-072-01:2016] Y. Nakazawa, K. Nishihara. Formation of students' perceptions of physical education. *Niigata journal of health and welfare*, 16(1):21–25, 2016.

For formative evaluation of teaching, it is essential to consider students' perception of teaching. This study aimed to investigate the effect of the order of units in a physical education class on students' perception. The subjects were 126 freshmen enrolled in a general physical education course. The course units were arranged in the following manner: badminton, volleyball, and basketball. At the end of the course, the students described their thoughts regarding it. We analyzed the documented responses via text mining. The results showed that the order and characteristics of the course units, specially arranged for this study, progressively affected the students' perception.

[nakazawa-401-072-02:2016] Hideaki Murakami Ken Nakazawa Yoshihiro Shimizu Hiromitu Yano, Yuji Maruyama. Transient psychological changes of middle-aged and older participants in a walking event -A practice of continuous health promotion in a suppe-aging community-. *Japan wellness journal*, 1(13):13–21, 3 2017.

The purpose of this study was to evaluate the changes in moode and emotions of middle-aged and older participants in walking. Nevgative emotions of participants was decreased after walking. on the other hand, their fatigue was unchanged.

[ykira-401-072-01:2016] Yosuke Kira. Self-punishment and Internalization of Social Norms: The Mind Following Norms (in Japanese). *Sociological Theory and Methods*, page forthcoming, forthcoming.

Self-sanction in the repeated norm enforcing game is analyzed in order to analyze norm internalization of rational actors. Self-sanction is costly punishment which is carried out to self and includes psychological (e.g. conscience and regret), economic (resigning a job), and physical (hurting self) processes. The norm with self-punishment strategy equilibrium is characterized, and both self-sanction and external-sanction which is carried out by other players are considered. The equilibrium is sustained even when the social norm brings inefficient outcome. We obtained following results. Firstly, the equilibrium is sustained in wider setting of parameters when self-sanction is planned. Secondly, social norm in N-

prisoners' dilemma setting can be sustained without external-sanction. Lastly, key mechanism sustaining inefficient norms is not self-sanction but external one.

[ykira-401-072-02:2016] Yosuke Kira. The survival of inefficient and efficient norms: Equilibria with and without meta-norms in a repeated norm enforcing game. *Journal of Mathematical Sociology*, forthcoming.

Although meta-norms have been considered as the key to sustaining cooperation norms, this study argues that meta-norms also facilitate the survival of inefficient norms. The opportunistic norm violation strategy is proposed as an alternative mechanism to motivate costly punishments. A repeated norm enforcing game, in which the externality of the normative action can be negative or positive, is analyzed. This game is equivalent to a social di-lemma if the externality is large enough. The ranges of externalities that support tit-for-tat, meta-norm, and opportunism equilibria are compared. The meta-norm equilibrium has the highest stability; however, it can persist in negative externalities. Finally, the opportunism equilibrium is more stable than the tit-for-tat equilibrium, but it breaks down when the externality is small.

[ykira-401-072-03:2016] Yosuke Kira. Why does Communication Resolve Social Dilemmas?: Equilibrium Refinement in Iterated N-person Prisoner's Dilemma (in Japanese). *Sociological Theory and Methods*, pages 107–124, 2013.

The game theoretical model in this article formulates the effect of communication in social dilemma situations. Many psychological experiments and field studies indicate that social dilemmas are often resolved when the members are able to communicate each other. In order to understand this mechanism, we refined equilibria in infinitely iterated N-person prisoners' dilemma (INPD) game. Because many Pareto-deficient sub-game perfect Nash equilibria exist in the game, we exclude Nash equilibria which are dominated by single-period coalitional deviation. The equilibrium concept is closely related to Strong Perfect Equilibrium, which is invented by Rubinstein (1980). From this analysis, I revealed that almost all sub-game perfect Nash equilibria in which many players defect in more than one stage are dominated by coalitional deviation. Moreover, the model shows two interesting implications. Firstly, both communications and long-term relationships are needed to achieve cooperation in social dilemmas because those have different functions. Secondly, under some conditions, cooperative outcomes are obtained only if players can collude without any inhibition.

[ykira-401-072-04:2016] Yosuke Kira. Game theory analysis of negotiations on

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municipal mergers: an elementary model (in Japanese). *Public Choice Studies*, 56:31–47, 2011.

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Unrefereed academic journal

[nakazawa-401-072-03:2016] Ken Nakazawa Noriyuki Kikuti. AY 2016 Survey on University of Aizu first-year student Lifestyle. *The University of Aizu Center for Cultural Research and Studies Annual Review*, pages 25–52, 2016.

[nakazawa-401-072-04:2016] Noriyuki Kikuti Ken Nakazawa. AY 2016 Survey on University of Aizu student Lifestyle. *The University of Aizu Center for Cultural Research and Studies Annual Review*, pages 53–106, 2016.

[nakazawa-401-072-05:2016] Ken NAKAZAWA Takuya WATANABE, Katunori FUJII. Influence of East Japanese Disaster Judged from Secular Trend of Fat Accumulated Rae based on Morphological Quality Difference in Univeristy Student. *Japanese society of educational and health science*, 61(3):276–283, Feb 2016.

Refereed proceedings of an academic conference

[nakazawa-401-072-06:2016] Y. Nakazawa, K. Nishihara. Placement of volleyball unit as a teaching material through action research. In *22th annual Congress of the European College of Sports Science Proceeding*, pages 92–93, 2017.

Based on the previous action research, we pointed out that the volleyball unit, which was taught second in the course, indicated that students' communication was activated and group cohesiveness was promoted through engagement with the unit. In this research, we planned a lesson in which the volleyball unit was placed first in the course based on reflection, and investigated the effect from the viewpoint of students' learning.

[ykira-401-072-05:2016] Yosuke Kira. The Conditions for Sustaining Efficient and Inefficient Norms. In *XVIII ISA World Congress of Sociology*. International Sociological Association, July 2014.

Although most rational choice theorists have assumed that social norms are created to prevent negative externalities, some norms spoil the welfare of people. These inefficient norms have been discussed as “unpopular norms”, which typically include “the emperor’s new clothes”, self-destructive adolescent behavior, infibulation, and honor killing. However, it is also true that efficient norms, which prevent uncooperative behavior, are observed in social dilemma situations. In this paper, we hypothesize that long-term relations stabilize both efficient and inefficient norms, but communications destabilize inefficient norms. We analyze a Sub-game Perfect Nash Equilibrium (SPNE) and a Strong Perfect Equilibrium (SPE) in an N-person repeated prisoners’ dilemma with the costly punishment option. A social norm is defined as an equilibrium in which every player is expected to do something (or refrain from doing something) and is punished by some or all other members if s/he deviates from this expectation. Two equilibrium concepts reflect a player’s ability to communicate. A strategy profile is an SPNE if no player can carry out solitary deviations (change his/her strategy). This equilibrium concept assumes a situation such that players cannot communicate with each other, e.g. tacit price collusions in oligopoly markets. As the Folk theorem indicates, there exist inefficient SPNEa, in which the Pareto-deficient payoff is sustained by costly punishment. In contrast, an SPE assumes a situation such that self-interested players can engage in cheap talk and collude. If feasible coalitional deviation exists, all members of the coalition can earn more by changing their strategies simultaneously. Every SPE is an SPNE, but the opposite is not true. The sufficient condition for existing SPEa is proved using the multi-objective dynamic programming method. In conclusion, we successfully formalize the hypothesized relationship between efficiency of norms, long-term relations, and communications among players. Additionally, we point out some notable implications.

[ykira-401-072-06:2016] Yosuke Kira. The Impact of Changes in Forest Ownership in Japan: Cross-Sectional Time-Series Analysis of the Prefectures in the Late 19th and Early 20th Centuries. In *The 15th Biennial IASC Global Conference*. International Association for the Studies of the Commons, May 2015.

Forrest ownership in Japan had been drastically changed in the period of the rapid modernization. In order to examine its impact on the agricultural production and the forest condition, the cross-sectional time-series data of Japanese prefectures is analyzed. From the late 19th, Japanese government introduced the modern land ownership system, and sorted the forestry commons jointly owned

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by local people into private and national, and municipal ownership. Many historical records indicate that the shrink of jointly owned forests had a big impact on forest conditions and the livelihood of local people. In many places, Japanese government and municipals cut down natural trees in nationalized lands, and planted timber trees in order to monetize it. Although the government argues that public management of those forests successfully increased timber tree production, some historical records suggest negative impacts. First of all, local people lost incentives to manage those forests after the ownership change, though they managed appropriately before. For example, the numbers of forest fires and illegal cutting were increased in the late 19th century. For the second, farmers suffered shortage of resources for agriculture from natural forests. For example, leafs and grasses from natural forest were essential because people fed them to cattle and dobbins which were necessary for agricultural production. However, gathering of forest productions was constrained and monitored by public officers in the forests owned by the government and municipals. In the worst case, local people are completely prohibited to use. For the last, the government had incentives to overcut timbers and to maximize short term profit. Increase of governmental income was considered more important than sustainable management because it was used for modernizing and industrializing the country. Hence some records indicate that overcut was occurred in some places. In order to examine these suggestions from case studies of historical records, the quantitative data was analyzed. Variables are obtained for each prefecture at each year in the late 19th and the early 20th. Main explanatory variables are area of forests owned by local villages, the government, municipals, and individuals. Explained variables are numbers forest fires, numbers of illegal cutting, amounts of rice production, and forest coverage. The result will be reported at the conference.

[ykira-401-072-07:2016] Shimpei Koike Kira, Yosuke. and Mayuko Nakamaru. Rotational Cooperation in the Repeated Missing Hero Dilemma. In *Social Interaction and Society*. ETH Zurich, May 2016.

The Missing Hero Dilemma (MHD) is a game in which cooperation by single player achieves benefits for all other players, but cooperation by more than one player do not contribute to the provision of the public good. The models can be applied to social dilemma situations in which costs of punishment and monitoring cause second-order free-riding problem. This paper assumes that the game is played repeatedly and that asymmetric costs, which mean that different players have different costs, exceed the benefit of cooperation. We prove that there exists a sub-game perfect Nash equilibrium in which some players (not necessarily

all players) cooperate by rotation. The proposition suggests that rotation intervals can be varied among players, and under some conditions, the equilibrium is sustained if and only if “stronger” players who pay a lower cost of cooperation undertake the role more frequently. This implies that if a few strong players endure frequent duties, the others can be free-riders. In field settings of common property resource management, successful self-organized groups often rotate the role of being the rule enforcer among a part of the group. These findings are consistent with some implications from our model, which will be tested empirically in the future.

[ykira-401-072-08:2016] Yosuke Kira. Social Norms With and Without a Meta-Norm: Costly Punishment in Repeated Games Sustains Not Only Cooperation but Also Unpopular Norms. In *The Sixth Joint Japan-North America Mathematical Sociology Conference*, August 2016.

Sociologists have discussed two conflicting perspectives on social norms. One is the rational choice perspective which argues that externality of a behavior or “demand for cooperation” is a precondition for emerging social norms. Another perspective emphasizes cultural and historical aspects of norms and points out that a social norm does not always bring benefits for members of the society. This paper confirms that meta-norms can sustain “unpopular norms” which bring unpleasant consequences of norm enforcement and discusses an alternative strategy for sustaining cooperation. In the studies on the rational choice perspective, the second-order dilemma problem puts temptation to players for avoiding cost for punishing violators of norms and hinders emergence of social norms. Axelrod’s meta-norm, which punishes someone who did not punish, is considered as a solution for this problem. Similar method of punishment is used in the proof of the Perfect Folk Theorem on repeated games. However, the theorem claims that diverse payoff vectors, including worse average payoffs than payoffs of Nash equilibrium in the stage game, are sustained as sub-game perfect equilibria. On the other hand, opportunistic norm violations, which arise when someone avoided cost for punishment, also can resolve the second-order dilemma in repeated games. Hence, we compare these methods for sustaining social norms when externality of a behavior does not exist or is very small. At each period of the N-person norm-enforcing game, a player decides whether or not to carry out “the behavior” and, at the same timing, whether to punish someone. The behavior can be either altruistic or waste of cost; the cost of the behavior is always positive, but the return which will be distributed to all members can be zero. If the return is large enough, the model represents a social dilemma situation with

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costly punishment options, and the behavior is considered as cooperation. In decision makings on punishment, each player can pay for punishing any player. Effectiveness and cost of punishment is defined by parameters. In accordance with the standard assumption of repeated games, future payoffs are discounted. We derived conditions for enforcing the behavior in sub-game perfect equilibria with and without a meta-norm. Our main finding is that a meta-norm can sustain equilibrium even when the return does not exist. By contrast, opportunism can sustain only when the return is large enough because threat of disappearing return resolves the second-order dilemma.

Unrefereed proceedings of an academic conference

[ykira-401-072-09:2016] Yosuke Kira. Evolutionary Stability in the Repeated N-prisoners Dilemma (in Japanese). In *64th Meeting of Japanese Association for Mathematical Sociology*. Japanese Association for Mathematical Sociology, September 2017.

We evaluated evolutionary stability of efficient and inefficient equilibria in the repeated N-prisoners dilemma.

Writing a part of textbook or technical book

[aoki-401-072-01:2016] Shigeyuki Aoki. *Adventures of Learner-centered Teaching*, chapter 6, pages 62–72. Nakanishiya Publication, November 2016.

Research grants from scientific research funds and public organizations

[aoki-401-072-02:2016] Shigeyuki Aoki. Foundational studies on dialectical educational program for argumentation (Co-Investigator), 2016.

[ykira-401-072-10:2016] S. Horiuchi K. Tominaga H. Takikawa M. Asaoka Y. Kira Y. Nakai, Y. Kanazawa and M. Morino. JSPS Grant-in-Aid for Scientific Research B, 2016-2019.

[ykira-401-072-11:2016] S. Obayashi Y. Kira and Y. Inagaki. JSPS Grant-in-Aid for challenging Exploratory Research, 2017-2020.

Academic society activities

[ykira-401-072-12:2016] Y. Kira, 2016-2019.

Board member of Research Activity Committee

Others

[aoki-401-072-03:2016] Toshihiro Yamada Shigeyuki Aoki, Michiko Yajima. Various approaches to and Significance of History of Science and Science Studies - Science Studies Session at JpGU 2015. Studies on History of Science (Japanese), III, Vol.55, No.277, 2016, pp. 94-95., 2016.

[hasegawa-401-072-01:2016] Koichi Hasegawa /Collaborative Umetsu Kosue. The uniqueness and Culture of Kendo, 2018.

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[ykira-401-072-13:2016] Y. Kira. Online Cooperation and Trust in Crowdfunding. 1st Joint Symposium between UoA and Yamagata University, July 2017.

Online societies are rapidly developed, and building cooperation and trust becomes important research topic in sociology. We will (this project is in progress) theorize the mechanism of cooperation and trust in crowdfunding (CF) and test the hypothesis using data obtained from CF platforms.

Contributions related to syllabus preparation

[hasegawa-401-072-02:2016] physical activity 1.2.3.4 theory of human health

[hasegawa-401-072-03:2016] physical activity 1.2.3.4 theory of human health

[nakazawa-401-072-07:2016] Physical Education1

[nakazawa-401-072-08:2016] Physical Education2

[nakazawa-401-072-09:2016] Physical Education3

[nakazawa-401-072-10:2016] Physical Education4

[nakazawa-401-072-11:2016] Theory of Health and Physical Education

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[nakazawa-401-072-12:2016] Health and Exercise

Contribution related to toward equipment management, classroom management, building management, and crime or fire prevention.

[hasegawa-401-072-04:2016] Sports Facilities

[hasegawa-401-072-05:2016] Sports Facilities

[nakazawa-401-072-13:2016] Management of Physical Education Facilities

Employment guidance

[nakazawa-401-072-14:2016] Support for entering the graduate school of our university

[ykira-401-072-14:2016] Gave a lecture in the Career Meeting Seminar for graduate students on Sep. 2017

Advisor of a student club or circle

[hasegawa-401-072-06:2016] Kendo club Dance club

[hasegawa-401-072-07:2016] Kendo club Dance club

[nakazawa-401-072-15:2016] Swimming Club

[ykira-401-072-15:2016] Adviser of the Japanese Sake Studying Club since Jan. 2017

Contribution related to student management (for example, solution of a student-related problem)

[ykira-401-072-16:2016] Member of the committee for evaluating application to the TGU Challenger Budge System

Contribution related to the building or operation of the university computer system

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[ykira-401-072-17:2016] Member of the working group for outsourcing of system administration

Contribution related to educational planning management

[ykira-401-072-18:2016] Member of Faculty Development committee since 2017

Contribution related to planning administration for research, research conferences, or international research

[hasegawa-401-072-08:2016] Society for the study all Japan Kendo Federation

Other significant contribution toward university planning, management, or administration

[nakazawa-401-072-16:2016] Member of Health Committee

[ykira-401-072-19:2016] Member of short-essay test committee for entrance examination by commendation

[ykira-401-072-20:2016] Member of mathematical test committee for entrance examination

[ykira-401-072-21:2016] Class mentor since 2017

[ykira-401-072-22:2016] Proofreading member of tasks for PC Koshi-en (programming competition)

[ykira-401-072-23:2016] Evaluated blogs and videos of students who joined Global Experience Gateway.

Contributions related to regional education

[aoki-401-072-04:2016] Public lecture on radiation (in collaboration with Ookuma Town), Ookuma Town Oono Elementary School, 2016.6.23

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[aoki-401-072-05:2016] Public lecture on Uses of English for Aizu High School students, University of Aizu, 2016.10.15

[aoki-401-072-06:2016] Committee member of Social Education at Aizu-Wakamatsu City, 2016

[hasegawa-401-072-09:2016] 1. Member of Committee for Honor and Rank in All Japan Kendo Federation. (1) Committee member for the AJKF Kendo Honor and Rank (AJKF Kudan Office, monthly). (2) Scorer of the AJKF Honor Judge (Kyoshi and Renshi), May and November 28. (3) Researcher of Kendo Research Group, May 28. 2. President, Fukushima Kendo Federation. (1) Presidents' Assembly of Prefectural Kendo Federation, May 28. (2) Lecturer and board member (Chairman of the meet and head judge) in various training sessions and meets in Fukushima Prefecture. 3. Dispatched lecturer of AJKF. Lecturer, training session of Kendo instructor of Akita Prefecture, February 2017. 4. Dispatched lecturer of The Nippon Budokan. (1) training session for instructors (instruction method), Kofu, Yamanashi, July 2017. (2) Lecturer, All-Japan Kendo instructors' meet, Mito, Ibaraki, August 2017. (3) Practical instructor, All-Japan Junior High School Kendo Training Establishment Meet, Morioka, Iwate, March 2016. 5. The Board Member of Nationwide and quasi-Nationwide meet. (1) Chairman of Board Members, All-Japan East-and-West Kendo Meet, Koriyama, Fukushima, September 2016. Performance of Japan Kendo Form (appeared in AJKF website) (2) Vice Chairman, Tohoku-and-Hokkaido Kendo meet, Fukushima, Fukushima, August 2016. 6. Judge and Judgement board member of the AJKF Rank Judgement Committee. (1) Judge, Screening session for promotion to 6th and 7th Rank, Sendai, Miyagi, August 2016. (2) Tokyo, November 2016 7. Appearance in Nationwide meet. (1) All-Japan 8th Rank Invitational Tournament (4th), Nagoya, Aichi, April 2016. (2) Appearance in All-Japan Kendo Form Meet, May 2016 8. Judge in Nationwide meet. Judge, All-Japan Prefectural Kendo Meet, April 2016.

[hasegawa-401-072-10:2016] Chief of Fukushima Prefectural Kendo Federation Judgement for Kendo 6Dan and 7Dan Judgement for National tournament Instructor for National Training session the member of Instructive Committee All Japan Kendo Federation

[hasegawa-401-072-11:2016] Chief of Fukushima Prefectural Kendo Federation Judgement for Kendo 6Dan and 7Dan Judgement for National tournament Instructor for National Training session the member of Instructive Committee All Japan Kendo Federation

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- [hasegawa-401-072-12:2016] Chief of Fukushima Prefectural Kendo Federation Judgement for Kendo 6Dan and 7Dan Judgement for National tournament Instructor for National Training session the member of Instructive Committee All Japann Kendo Federation
- [hasegawa-401-072-13:2016] Chief of Fukushima Prefectural Kendo Federation Judgement for Kendo 6Dan and 7Dan Judgement for National tournament Instructor for National Training session the member of Instructive Committee All Japann Kendo Federation
- [hasegawa-401-072-14:2016] Chief of Fukushima Prefectural Kendo Federation Judgement for Kendo 6Dan and 7Dan Judgement for National tournament Instructor for National Training session the member of Instructive Committee All Japann Kendo Federation
- [hasegawa-401-072-15:2016] Chief of Fukushima Prefectural Kendo Federation Judgement for Kendo 6Dan and 7Dan Judgement for National tournament Instructor for National Training session the member of Instructive Committee All Japann Kendo Federation
- [hasegawa-401-072-16:2016] Chief of Fukushima Prefectural Kendo Federation Judgement for Kendo 6Dan and 7Dan Judgement for National tournament Instructor for National Training session the member of Instructive Committee All Japann Kendo Federation
- [nakazawa-401-072-17:2016] Committee board of the Fukushima Prefecture Sports Promotion Council
- [nakazawa-401-072-18:2016] Committee board of the Aizu wakamatsu city Sports Promotion Council
- [nakazawa-401-072-19:2016] Committee board of the Fukushima Prefecture Sports Medical Science Committee

Contribution toward education for employees of regional industries

- [ykira-401-072-24:2016] Lecturer (joint with Prof. Fujii) of the seminar of statistical data analysis for administrative staffs at Koriyama city. The series of three lectures provided opportunity for learning mind and techniques of statistical analysis and open data.

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Other noteworthy contribution related to regional industries

[ykira-401-072-25:2016] Vice chair of information disclosure committee of Aizu-wakamatsu Special District Authority (in Japanese, Aizu-wakamatsu-chihou koiki shichoson-ken seibi kumiai)

Did you participate in students recruitment, support the alumni, and/or contact with student's parent? (Yes or No) If yes, please describe what you did.

[nakazawa-401-072-20:2016] Advancement support to the graduate school of Physical Education

[ykira-401-072-26:2016] Trial lecture for students from Fukushima Commercial High School on June 2017

[ykira-401-072-27:2016] Trial lecture for students from Iwaki Commercial High School on Sep. 2017

Did you participate in Faculty Development? (Yes or No) If yes, please describe what you did.

[nakazawa-401-072-21:2016] Council of Education and Physical Education

[nakazawa-401-072-22:2016] The 8th University Physical Education Leaders Training Workshop

[nakazawa-401-072-23:2016] Exchange information on scientific activities of cardiac rehabilitation especially Phase3 cardiac Rehabilitation heart groups (10TH of July 2017). German Sports Univeresity of Cardiology and Sports Medicine, dep. Preventive and Rehabilitative Sport Medicine and Exercise Physiology.

[ykira-401-072-28:2016] Selected as a participant of Leadership for Academic Development Certificate Program at Tohoku University. This two year program requires more than 120 hours of learning skills and theories for management, development, and improvement of universities. In 2017, I joined two intensive courses (three days) and two one-day workshops held at Tohoku University. In addition, I visited Akita International University and investigate remarkable characteristics of education.

Did you participate in Public Lectures, and/or Open Campus? (Yes or No) If yes, please describe what you did.

[nakazawa-401-072-24:2016] Fukushima Physical Education Association Certified Athletic Trainer Training Course Sports Psychology

[ykira-401-072-29:2016] Provided a poster session introducing CCRS and courses of social sciences and humanities at Open Campus (summer and autumn session)

Do you have experience of University-Industry collaboration? If yes, please describe your experience. (for UBIC's information)

[ykira-401-072-30:2016] The AOI project joint with Lion-Dor Cooperation, The Designium, and Prof. Fujii (UBIC) aims to provide the opportunity of problem-solving learning for UoA students. I participates the project as an advisor for statistical analysis of POS data. We are building an web application for optimizing retail business of Lion-Dor Cooperation using statistical methods, e.g. time-series regression model.