IJMPERD

International Journal of Mechanical and Production Engineering Research and Development (IJMPERD)





International Journal of Mechanical and Production Engineering Research and Development

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MANAGEMENT TEAM

T. Sethuraman @ TSR

Co-founder and Chairman

T.Sethuraman who is fondly known as TSR in business circle, has been the motivator and inspiration behind the formation of TJPRC. He served in Indian Air Force (IAF) for about 18 years and got a voluntary retirement as Junior Warrant Officer at the age of 36 years in view of providing educational services to the poor and downtrodden. Though he is an educationally unqualified philanthrope, with the experience he had gained in his IAF career, he later on stamped his foot print in various business domains like automobiles, IT communications, FMCG distributions, Constructions etc., with management assistance and leadership directives from Ln. Prof. Dr. Manivannan Sethuraman.

Ln. Prof. Dr. Manivannan Sethuraman, B.Tech (Chem)., D.E.M., D.T.Tech., A.M.S.P.I., M.B.A., M.S. (Software Systems), P.M.P (PMI, USA)., F.M.S.P.I., Q.P.M.P. (IPMA, Switzerland), S.C.E.A. (Sun Microsystems, USA), M.I.E., W.C.P.(BEA Systems, USA), C.S.Q.A.(QAI,

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Founder Managing Director and Chief Editorial Officer

Ln. Prof. Dr. Manivannan Sethuraman has a successful track record in various leadership capacities in the Engineering operations, Quality & Process Management, Industrial Marketing and Production across Chemical Engineering, Manufacturing and Software Engineering disciplines in the leading conglomerates that include Flex Industries Limited (http://www.flexindustriesltd.com), 3i Infotech (www.3i-infotech.com/), CSS Corp (www.csscorp.com/), etc., He has hands on experience and expertise in all phases of Software Development Life Cycle like Requirements Analysis, Enterprise Architecture Design, Development, Implementation and Training of distributed systems with excellent system design experience using UML, Rational Rose and System Architect 2001. Has about 16+ years of technofunctional experience and an in-depth understanding of emerging technologies and their commercial applications.

Have held responsibilities in various capacities in disparate functions like Pre-sales assistance, Proposal preparation, Project Initiation, Project Planning, Team Acquisition-Allocation-Development, Scope Planning-Developmentcontrol, Cost Estimation-Budgeting-Control, Project Execution-Oversight-Tracking, Quality Planning-Assurance-Control, Infrastructure Planning-Acquisition-Administration, Software Configuration Planning-Management, Performance Monitoring-Reporting-Review, Release Management, Client & Vendor Management and Closure of Projects & Contracts.

Ln. Prof. Dr. Manivannan Sethuraman is an innate entrepreneur and is instrumental in establishing various retail centres across disparate disciplines like automobiles, IT communications, FMCG distributions, Constructions etc.,, in his early years itself, sustaining them with high process orientation and running them profitably successfully for many years. He has obtained the following prestigious technical certifications given by International bodies like :

- SUN Microsystems, USA,
- Quality Assurance Institute (QAI), USA,
- Project Management Institute (PMI), USA,
- International Project Management Association (IPMA-Swiss),
- BEA Systems, USA and
- International Register of Certificated Auditors (IRCA), UK
- Tekmetrics, USA
- Young achiever award from Rotaract and Lion's clubs, Mayiladuthurai, India.

Following list portrays the different certifications obtained by our M.D and C.E.O :



- Certified Sun Java 2 Programmer.
- Certified Enterprise Architect in J2EE.
- Certified BEA Weblogic Server 5.1 Architect.
- Certified Project Management Professional (PMP) by PMI, USA.
- Certified Qualified Project Management Professional (QPMP) by IPMA,

Switzerland.

- Certified Software Quality Analyst (CSQA) by QAI, USA.
- Certified Internal Auditor of projects by IRCA, UK.
- Certified Tekmetrics & BrainBench Java Programmer.
- Certified Tekmetrics C++ Programmer.

He is an Associate and Fellow member of Management Studies Promotion Institute, New Delhi, India, life time member of Project Management Association, Indian associate of International Project Management Association, Switzerland, Member of Project Management Institute, USA, Member of Institute of Engineers, India, Member of Computer Society of India and Editorial board member of International Association for Engineering and Management Education, Chennai, India.

He has published several articles in Computer Science, Engineering and Information Technology in the leading Indian and International journals, conferences etc., and has been an inaugural speaker at national and international conferences organized by leading institutions like Anna University of Technology, Coimbatore, Velammal College of Engineering, SSN College of Engineering, Nandha Engineering College, AVC Engineering College, Kalaimagal College of Engineering etc., in India.

Ln. Prof. Dr. Manivannan Sethuraman obtained his B.Tech., in Chemical Engineering from National Institute of Technology, Trichy, MBA from Thiagarajar School of Management, Madurai, MS (Software Systems) from BITS, Pilani, Rajasthan and Ph.D., from Anna University of Technology, India

Scholastic and Entrepreneurial Achievements

- Recipient of merit scholarship and merit certificate for having secured 1st rank in the district and 12th rank in the state in SSLC examination from the Government of Tamilnadu.
- Recipient of **Aringnar Anna award & scholarship** from the Government of Tamilnadu for all the four years of B.Tech.,(Chemical Engineering) for having secured first rank in the district in H.S.C.,(Plus 2) examination.
- Recipient of merit certificate for having secured prestigious position /
 2nd rank in the Bharathidasan University in the under graduation.
- Secured **University rank** for the final year project in post graduation in the Management.
- Recipient of monetary **Fellowship** (USD 1100 per month) from the Yale University for pursuing a 5 year integrated Ph.D., course in 1993.
- Recipient of the prestigious "Quality Champion" award from the chairman of M/s Flex Industries Limited (Mr. Ashok Chaturvedi) for having resolved quality issues for one of the company's prominent customers (HLL, Coimbatore and Khatgeshar) in the manufacturing and flexible

packaging industry in 1997.

- Recipient of CSS Corporation's "Best Manager" award consecutively for 2 times for an excellent performance in the Account Management function and displaying high degree of efficiency in Software Project Management discipline.
- Recipient of "CSS Distinguished Fellow", an award given by CSS
 Corporation's Management team for the year 2009 towards an outstanding accomplishment in Software delivery and account management.
- Recipient of Young achiever award from Rotaract and Lion's clubs, Mayiladuthurai, India.
- Recipient of entrepreneurial awards from corporates like M/s Kothari Products Limited, M/s Henkel SPIC India Ltd, M/s Parle Products Ltd., M/s Nutrine Confectionery Ltd., etc.,

Professional Memberships

- Project Management Institute (http://www.pmi.org/), USA.
- Project Management Association, Indian associate of International Project Management Association (http://www.ipma.ch), Switzerland (European equivalent of the PMI® USA).
- Institute of Engineers(https://www.ieindia.info/), India.
- Member of Computer Society of India (http://www.csi-india.org).
- Member of QAForum, Chennai and using which guided QA personnels of various companies in getting them the CSQA certification along with other seniors and attended informal meetings on weekly basis to ascertain and update the quality practices of various companies.
- Associate member of M.S.P.I., New Delhi.
- Fellow member of International Association for Engineering and Management Education, Chennai, India (http://www.iaeme.com/).
- Editorial board member of International Association for Engineering and Management Education, Chennai, India (http://www.iaeme.com/).

Paper publications - (a few from plethora of publications)

Following are some of the important papers (but not limited to) presented by our beloved MD and CEO in different National and International journals / conferences.

- Paper published on title "Rheology of Blood" at a National symposium conducted by IEEE in National Institute of Technology, Trichy and won the first prize.
- Paper published on title "Multiple Views of CMMI approach" in "Tool Box for IT" and "www.stickyminds.com" journals.
- Paper published on title "Knowledge Management in Software Organization" in "IndianMBA.com" IT journal.
- Paper published on title "Methodology of Patenting of Software Product" in "www.oppapers.com" journal.
- Paper published on title "Empirical Investigation of success and failure factors of CMMI implementation" in "KMPro Journal" journal.
- Paper published on title "Design and Development of Software metrics for Development and Maintenance Project" in "Serials Publications" international journal.
- Paper published on title "Application of Metrics for Software Process Improvement " in "Tool Box for IT" journal.
- Paper published on title "Defect and Effort Prediction Models in Software Maintenance Projects" in "International journal of Management (IJM) -Pages 20 – 34, Volume 1, Issue 1(2010), May 2010.
- Paper published on title "Software Metric Analysis Methods for Product Development and Maintenance projects" in "International journal of Computer Engineering and Technology (IJCET) - Pages 18 - 33 Volume 1, Issue 1(2010), May - June 2010.
- Paper published on title "Software Process Methodologies and a comparative study of various models " in "International journal of Computer Engineering and Technology (IJCET) - Pages 123 - 135 Volume 1, Issue 1(2010), May - June 2010.

S. Vijayalakshmi

Director – Publications and Subscriptions

Mrs. S. Vijaylakshmi is an educationally unqualified, but a proven writer & journalist under the able encouragement of Lion Prof. Dr. Manivannan Sethuraman. She has been writing articles pertaining to South Indian ethos, culture, religion, dynasties, family relationship, lineage etc., for more than 20 years as a columnist for variety of magazines, local dailies and weeklies. Traveled throughout India, from East to West and North to South by virtue of her husband's transferable IAF job, she has been exposed to multi cultural, multi lingual, multi communal and multi racial aspects of India, which was an instigating factor in imbibing and absorbing the intricacies of human ethos in this part of the world. She has about 20 years of experience in the publication and printing industry.

M. Jayasudha

Director – Research

M. Jayasudha obtained her graduation in Computer Science and Engg from one of the reputed colleges in India and has got about 15 years of experience in software consulting, general management and research consulting. As an avid reader and an aggressive thinker, she has always been successfully leading technical teams and has got good exposure to research consulting. She is the sitting chairman of TJPRC's Research Board, which comprises eminent professors who are specializing in disparate disciplines. Has worked in reputed software vendors in and around India prior to joining TJPRC.

Research Board

The Research Board is a sub council within the TJPRC framework created to strengthen and deepen the knowledge base related to disparate disciplines across Engineering & Technology, Management, Arts, Science, Humanities, Health and Medical Sciences. The Research Board has a flexible approach to basic research, Planning, Funding, Project execution and Delivery. Chief Technology Officer (CTO) is the chair person of research board who directs all the other members in the below displayed hierarchy. The board's day-to-day operations is being handled by Mrs.M.Jayasudha, who holds directorship in the board of company (<u>www.tiprc.org</u>). The research board comprises eminent advisors who have got specializaton and interests in disparate disciplines and are well known, reputed contributors in their own functional areas. CTO's decision is final with respect to any business proposals, research findings etc.

The Board is soliciting funds from Governmental institutions & Private research firms to nurture research talent and to create research facilities in the Universities, higher technological institutions, colleges and other research centers including industries in the country for promoting basic research, design and development. The board's activities are co-ordinated through specialist panels constituted for various disciplines like Engineering & Technology, Management, Arts, Science, Humanities, Health and Medical Sciences. The Board also participates in Government tenders, proposals etc., to get funding for the execution of research projects.

Ln. Prof. Dr. Manivannan Sethuraman, B.Tech (Chem)., D.E.M., D.T.Tech., A.M.S.P.I., M.B.A., M.S. (Software Systems), P.M.P (PMI, USA)., F.M.S.P.I., Q.P.M.P. (IPMA, Switzerland), S.C.E.A. (Sun Microsystems, USA), M.I.E., W.C.P.(BEA Systems, USA), C.S.Q.A.(QAI, USA), F.M.I.P.M.A., S.C.J.P.(Oracle Corporation, USA), F.M.I.A.E.M.E., Ph.D.,

- Chief Technology Officer (CTO) - Research Board, Transstellar Journal Publications and Research Consultancy Private Limited (TJPRC)

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leading conglomerates that include Flex Industries Limited (<u>http://www.flexindustriesltd.com</u>), 3i Infotech (<u>www.3i-infotech.com</u>/), CSS Corp (<u>www.csscorp.com</u>/), etc., He has hands on experience and expertise in all phases of Software Development Life Cycle like Requirements Analysis, Enterprise Architecture Design, Development, Implementation and Training of distributed systems with excellent system design experience using UML, Rational Rose and System Architect 2001. Has about 16+ years of techno-functional experience and an in-depth understanding of emerging technologies and their commercial applications.

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- Tekmetrics, USA
- Young academic achiever and entreprenerial awards from Rotaract, Leo and Lion's clubs, Mayiladuthurai, India.

M. Jayasudha- Director Research – Research Board, Transstellar Journal Publications and Research Consultancy Private Limited (TJPRC)

M. Jayasudha obtained her graduation in Computer Science and Engg from one of the reputed colleges in India and has got about 15 years of experience in software consulting, General management and Research consulting. As an avid reader and an aggressive thinker, she has always been successfully leading technical teams and has got good exposure to research consulting. She is the sitting chairman of TJPRC's Research Board, which comprises eminent professors who are specializing in disparate disciplines. Has worked in reputed software vendors in and around India prior to joining TJPRC. Advisors :

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Prof.Dr.Srikanta Charana Das, Ph.D., CTO cum Head, ICT Cell, Campus 6,KIIT University, Bhuvaneswar-24, Orisaa, India. Ex-CEO of Megacall Technologies Pvt. Ltd., an International Call Centre, Noida, U.P., India

Prof.Dr.M.Abul Kashem, M.Sc., Ph.D., (University of Reading, UK), Professor, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh 2202, Bangaladesh

Prof.Dr.M. P. Kaliaperumal, M.Tech., Ph.D., Director (Corporate Relations), Velammal Engineering College, Chennai - 600066, India

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The publication of a research paper / case study / short communication in a peer-reviewed journal is an important building entity in the development of a knowledge repository. In an age of information abundance, it is very important and vital to help readers and research scholars to segregate quality information. It is mirror reflection of the quality work of the authors and the publishers who support them. Transstellar Journals (TJPRC Journals) understand the importance of publication ethics and we had established standards of ethical behavior for all parties involved such as the authors, the peer review experts, the editors, and the publisher.

Transstellar Journals is committed to ensuring robust peer review and ethical standards in publication and quality of articles. Strict adherence to standards of ethical practices as defined by Code of Conduct of the Committee on Publication Ethics (COPE) is expected from all the parties involved: Editors, Authors, Expert Reviewers and the Publisher. We work to educate researchers, authors, contributors, reviewers, and editors on understanding and delivering those standards, in partnership with others.

Transstellar Journals (TJPRC Journals) is committed to supporting stringent peer review process, scientific, ethical and quality standards in publishing and as such we work hard to educate researchers, authors, board members, editors and reviewers on understanding and meeting those standards, as a team.

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- Disclosure, conflicts of interest, and other issues
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Role & responsibility of Reviewers:

- Assistance to Editors
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- Firm on Objectivity / Eradication of subjectivity
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- Acknowledgement of sources
- Disclosure and conflict of interest

Role & responsibility of Authors:

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- Avoidance of concurrent publication
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- Disclosure and conflicts of interest
- Notification of Fundamental errors in published works

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- Intellectual property and copyright
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Transstellar Journals (TJPRC) follows strict Code of Conduct and aims to adhere to its Best Practice Guidelines

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All our journals are committed to publishing only original contents, i.e., contents that have neither been published in other journals, nor is under review elsewhere. Plagiarism in any form is not accepted and if found, it is notified to all the stakeholders and necessary actions will be taken and will incur plagiarism penalty. Corrected articles will be verified once again to ensure that it does not have plagiarism issues.

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Multiple submissions are considered to be a serious academic misbehavior. Even when a publication fee is paid, it wastes the time and work of the editors and other stakeholders, and contributes to the problem it is intended to solve, the slow speed of editorial review. Scientific articles that are found to have been under review in other journal publishers, or to be published elsewhere, will incur duplicate submission penalties. The penalty will be decided by the Publication Ethics Committee (PEC). If contributors have used their already published work, or work that is currently under review, as the basis for a submitted work, they are required to quote / cite the previous work and indicate how their submitted work offers novel contributions beyond those of the previous work.

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Data Falsification:

Submitted research materials that are found to have falsified experimental outcomes will incur falsification penalty. The penalty will be decided by the Publication Ethics Committee (PEC)

Citation Manipulation:

Citation Manipulated articles are those articles that are found to include citations whose objective is to increase the number of citations to a given author's work, or to articles published in a particular journal. These Citation Manipulated manuscripts will incur penalty. The penalty will be decided by the Publication Ethics Committee (PEC) Publishing & Printing Activities

Publishing :

We are looking for authors and institutes who are interested in publishing their monographs, National and International conference proceedings and new Journals. We have a worldwide network and a wellorganized and strong infrastructure. A mailing list of One hundred and fifty thousand or so intellectuals, scholars, Universities, Institutions, reviewers and common readers worldwide strengthen it further. Coping with the modern publishing necessities, we have a fully computerized production infrastructure.

1.1 Publishing Activities :

After you submit your manuscript to Transstellar Journal Publications and Research Consultancy Private Limited (TJPRC), a production editor will be assigned to your work. That person will work closely with you and various production specialists to ensure that your paper moves through the following stages of production as smoothly as possible. We publish technical papers in Scopus, SCI, SCIE, ESCI, Web of Science indexed journals.

1.2 Copy editing :

A copy editor will edit your manuscript electronically, line by line, using the revisions (track changes) feature in MS Word. You will then be e-mailed the copyedited manuscript and have an opportunity to review the edits, answer queries, and make any necessary changes before typesetting. In case of no change, your manuscript will be sent to the next step

1.3 Type setting :

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VACCINATION: SAVING OR SUPERIORITY AVERMENT? THE BODY SPACE SHORT STORY "VARIOLA" WRITTEN BY IKSANA BANU IN PERSPECTIVE OF SPATIAL POLITICS SARA UPSTONE

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ABSTRACT

This study examines the problem of colonial body construction in the short story "Variola" by Iksaka Banu and the relationship with outside discourse. The theory used is Sara Upstone's spatial politics, especially about body space. The body was seen as the site for the hegemonic practice of colonial discourse. Such a body is known as a metaphoric body; that is, one that can be divided and has hierarchical relationships. The data collection methods of this research are literature review and observation technique. The data analysis used a qualitative descriptive method. The results and discussion of this study prove that body construction in the short story "Variola" is not an autonomous body. Through the narrative of salvation in the form of vaccinations, the children's bodies were then used as a colonial space marked by discourses of blood purification and white racial supremacy. The practice of marking was aimed at instilling and or affirming the superiority of the West as a colonial state. The superiority that was deliberately constructed by the colonizer caused inequality so that the colonized became the object of illumination or civilization. The appearance of the Dutch figure and his character through the sacrifices made by Hendrik Plathart in one sense is chaos in the general view of the psychological discourse that all colonizers were evil. However, on the other hand, the sacrifice of the bodies of children born from relationships with indigenous women shows that they are still trapped in the discourse of blood purification.

KEYWORDS: Spatial Politics, Body, Colonial Discourse & Vaccination

INTRODUCTION

The body in the context of colonialism cannot exist merely as an autonomous one. It is not an object that can only be fully viewed as a biological or physical phenomenon. The body is presented as a representation of self-identity, a space for the practice of marking both socially and culturally, and even a place of economic battle (capitalism) and other knowledge practices. The body is defined and limited by something that is outside it. The body, as the smallest, personal, and intimate scale, is a space that has an important role in the practice of colonialism and post-colonialism (Upstone, 2009). Colonialization utilizes the body through several strategies, both subtle and gross, to control, maintain power, and keep the stability over a colony. Even in difficult and precarious situations, the body was maintained to conform to colonial definitions and orders. This problem appears in Iksaka Banu's short story entitled "Variola" which is compiled in a collection of short stories of *Teh dan Pengkhianat*.

The short story "Variola" has the background of the smallpox epidemic in 1871 in Java, mainly in Bali. When the plague began to spread to the up-country, the colonial government had difficulty dealing with it. Even though the vaccine was invented long before the incident, reasons for limited access to the area and the availability of medical personnel became obstacles. There is only one way that is most feasible and considered effective, which is implanting vaccines into the bodies of children who are then sent to Bali. After arriving at their destination, the vaccines will be harvested and used to heal the Europeans and the native people. The colonial government, through a medical team, needed several children who were willing to be vaccine carriers. However, the character in the short story had difficulty getting the children they wanted.

Iksaka Banu, through Variola presents a discourse about the body. He did not only present children's bodies as a savior medium for Balinese (and European) people who had been exposed to smallpox. His medical and physical bodies are clung to colonial traces. The body becomes an object to experience the continuity of interest so that the body experiences control, hierarchical division, and definitions that tend to be racial. Upstone (2009) says that the body is classified through sight, recorded, and defined in certain races and mixed types. The bodies of native children are perceived almost as conveyed by Christopher Fife during research in Papua New Guinea (Upstone, 2009). He said that the colonialists were concerned about the cleanliness and control of the bodies of the indigenous people, a dirty or undisciplined body that denotes an impossibility to civilize. Quoting Young (in Upstone, 2009), a colonized body is a body that is wanted but at the same time feared because racial hybrids are associated with a form of distortion and threatening degeneration.

Post-colonial literary works provide alternative spaces for the effort to liberate certain discourses. The post-colonial body space opens up the possibility of various experiences that come out of the common sense of colonial practice. In general, post-colonial literary works place more emphasis on colonized subjects to negotiate or be free from colonial construction practices. From these assumptions, the short story "Variola" offers something different. Even though it was written by an author coming from a former colony, the main character and other supporting figures were Dutch people who were colonial parties. The colonial experiences that arose did not come from the native people who tried to reclaim the colonial body. The body in the short story "Variola" was read and identified based on psychological discourse, which is closely related to the preferences of traits and behavior.

Research on the collection of short stories *Teh dan Pengkhianat* was conducted by SazmaAulia Al Kautsar with the title "*JejakKolonialdalam Kumpulan CerpenTeh dan PengkhianatKaryaIksaka Banu*" (Traces of Colonial in the collection of short stories *Tea dan Pengkhianat* by Iksaka Banu). He uses Homi K. Bhaba's perspective on hybridity, mimicry, and ambivalence. The research resulted in several conclusions, including that the hybridity in the short story includes colonial tyranny and indigenous culture, justifying the statement that "mixed blood is cursed" for colonialists. Colonialism is not always mean to natives, and natives are not stillkind and friendly. Mimicry was found in the form of dress and language by mastering foreign languages. Then the ambivalence itself consists of the defense of the natives of the colonial ruthlessness and the breached prohibition colonialism.

As an anthology book, *Teh dan Pengkhianat* is still relatively new. The short story was published in 2019. After receiving the Kusala Literary Award in 2014 for his book entitled *SemuauntukHindia*(All for the Indies), in 2019, the anthology *Teh dan Pengkhianat* by Iksaka Banu won the award again. There has not been much research on this short story. However, there are quite several studies related to the same formal object as this research.

Kholidah Uci Elly has used the issue of body space in her research entitled "KonstruksiTubuhdalamCeritaPendekKeroncongPembunuhanKarya Seno GumiraAjidarma" (Body Construction in the Short Story KeroncongPembunuhan by Seno GumiraAjidarma). Uci describes the construction of the body in the short story.

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The result is that Seno does not completely reject solid space but still presents magical and metaphorical spaces simultaneously. The body space in this short story can also act as a counterpoint that has a strong influence on the space outside the body. Another study using Upstone's body perspective was carried out by Rahariyoso (2014) on a poem entitled "*Sakramen yang terhimpundalambukukumpulanpuisi Di Bawah KibaranSarungkarya Joko Pinurbo*" (Sacraments compiled in the book collection of poetry Di Bawah Kibaran Sarong by Joko Pinurbo). Rahariyoso explained that the construction of the body in the Sacrament poetry paradoxically presents a dialectic between the body and the soul which deals with the problem of God as the body. The next research by Hardiningtyas et al. (2018) with the material object of Balinese poetry with the theme of the body. The results of this study indicate that the authority of the body experiences irony, namely the body as a physical, a symbol of religion, and the strength of women in the face of life's struggles. The body construction was pried by the poet, who is ontologically self-skinned. The body is destroyed in culture, mortality, while the soul as God is idealized in wholeness. Finally, the construction and body space between profane and sacred is a paradoxical space between body and spirit, which the poet deconstructs to be mere irony.

This study differs formally from Uci's research emphasizing Bhaba's three key concepts, namely hybridity, mimicry, and ambivalence. Colonial traces in Uci's research cover several aspects of life, such as language, clothing, politics, and so on. Meanwhile, the research that the researcher carries out only focuses on body space, a space that is very personal but considered important as a colonial site. Based on the three subsequent studies that use the same formal object, this study offers different material objects, namely Variola's short stories, which are compiled in an anthology of *Teh and Pengkhianat*. Apart from that, the three studies above tend to discuss the construction of the body related to spirit, sacred or profane, and colonial discourse and other forces outside of it. This research tries to link the body space with knowledge about attitudes or behavior between the colonizer and the colonized. Thus, this study at least wants to answer two problems; first, how the construction of the body in Varioal's short stories, and second, shows the relationship between these constructs and the attitude or behavior of the colonizer and the colonized.

In answering the two problems above, Sara Upstone's post-colonial theory about space politics is utilized in this research. Upstone (2009) argues that politics is often understood as a narrow term that refers primarily to large scales, namely actions that change national policies or legislation. Through his book, Spatial Politics in The Postcolonial Novels, Upstone offers an alternative concept of spatial politics that is not only rooted in state politics (on a large scale) but a shrinking diversity of spaces that helps build post-colonial experiences.

Upstone distinguishes two meanings of the terms place and space. Place signifies colonial control, while space refers to a broader and more flexible, namely the forms obscured by the colonialists (2009). Space within the colonial territory was used to maintain the stability of colonialism. In that space, the definitions and boundaries were created by the colonials as if they were something natural (which could not be changed or questioned again) to differentiate themselves from the natives. Automatically, the boundaries and definitions in space will obscure the preferences of the natives towards their identity, which includes identity, tradition, and all life practices that existed before colonialism (Rahariyoso, 2017). Colonial exercised both rough and subtle control over spaces that were considered important in practice to ensure the continuity of power when an area was occupied, or physically they had left.

The pointed, narrow space to build a post-colonial experience by Upstone is body space. The body, in this case, is still in the colonial scope, which defines that the body is the center of experience related to other spaces (2009). The body describes itself as an idea or concept that exists in various events that are left in it. Something outside the body has a role to

inherently construct the body itself. The colonialists embedded the superiority of their bodies over the colonized bodies. There is hegemonic control over the colonized body by the invaders.

The body in colonial discourse becomes a controlled body, physically rigid and characterized by traces of colonial or power representations classified based on race/color and ethnicity (Rahariyoso, 2017). The existence of indigenous bodies was used as an object for the continuation of colonialism in various control practices such as forced labor, torture, exploitation, and abuse. Even Upstone (2009) argues that to maintain superiority, the colonizers introduced increasingly hegemonic structures to separate different bodies in an often complex hierarchy. It is using the discourse of the lower body to justify conquest, associating the colonized body with animals rather than human characteristics, seeing the stereotype of black men as animalistic. It means that indigenous men of all races are often cast as rapists polluting the bodies of white women. The body that is divided, restricted, and controlled by the colonialists was called the metaphoric body. Meanwhile, a body that is no longer possible for division and hierarchical relationships is called a metonymic body (Rahariyoso, 2009).

Concerning colonial discourse, the definition of the body is also associated with psychological discourses that put the advantages and disadvantages of each type of body. The relationship between colonizers and colonizers is more of binary opposition, giving rise to hierarchies that are already considered absolute. The psychological discourse referred to in this study relates to the body of the colonizer and the colonized, which is adhered to by certain traits or behaviors that form a clear dividing line or simply black and white. The body is thus seen physically as well as in character as the identity of the colonized self.

METHOD

This research is descriptive qualitative research (Bazeley, 2013; Creswell, 2014; Silverman, 2013), and the object of this research consists of material objects and formal objects. As explained by Udasmoro (2012) that a material object is an object that will then become data. The object of this research material is the short story "Variola" by Iksaka Banu. Meanwhile, the formal object related to theoretical or epistemological is the colonial body space construction. After the two objects are determined, data in the form of words, clauses, sentences, paragraphs, and a series of events in the short story are collected using the literature review method(Apriyanto & Nurhayaty, 2019 andHidayat et al., 2019). The scrutinizing technique assists this method. This technique is a way of collecting data by scrutinizing significant linguistic units in short stories which are the source based on the theoretical concepts used (e.g., Anum & Apriyanto, 2019; Apriyanto et al., 2020; Apriyanto & Nurhayaty, 2012; Santoso & Apriyanto, 2020a, 2020b). In this respect, the data is the textual data that is given attention relate to Sara Upstone's colonial concept of body space.

The data analysis is carried out by searching for textual units to see the relationship between significant textual units in the short story "Variola" which is by Sara Upstone's colonial concept of body space. Before space is determined, the existing spatial construction is first explored, namely the representation of the body's existence with spaces, things, or discourses outside the body. This stage is assisted by exploring data outside the short story text in the form of books, articles, and journals that are still related to research problems. The construction is then explained how space arranges the body and positions it. The characters in the short story, which in this context are the space of the body, are viewed as oppositional as discourses of the body related to nature or behavior.

DISCUSSIONS

The colonial body or metaphoric body in the Upstone concept exists as a colonial-controlled and ruled space. The presence

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of this body is necessary for the affirmation of superiority in almost all areas of European life over its colonies. Before looking further at how the body is constructed, it is necessary to present an overview of the story in Variola related to a quite important issue, namely about vaccines.

The short story "Variola" tells about the handling of the Variola or smallpox epidemic in Bali in 1871. The characters shown by Iksaka Banu are Dutch. They are Dr. Jan Veldhart as head of the GeneeskundigeDienst in Weltevreden, AdriaanGeest as officer Van Gezondheid, Van Kijkscherp a pastor as well as an orphanage representative, and HenriekPlathart as a deacon. To the native and European people in Bali being saved, AdriaanGeest, who is also the main narrator, had to find ten children aged nine to twelve who would be injected with the weakened smallpox germs. These children can come from native, Indo, and European groups with a healthy and willing record. Unfortunately, this search is not easy. Many reasons come from the child's parents. AdriaanGeest only managed to get six children. He looked for the lack of children at an orphanage in Batavia, but Van Kijkscherp did not allow the children to be taken. At the end of the story, Hendrik Plathart gave up his four children, who came from his relationship with a native woman. They are a mestizo or a Malay-European blaster.

There are two things needing attention in the discussion. The first is the children's bodies that will be used as a medium for planting vaccines and the role of Dutch leaders, especially Hendrik Plathart.

"However, the areas affected by the plague are in the interior. You can't rely on vaccines with dyed threads clamped in resin-coated glass to save those who haven't been infected. We are forced to use ancient ways. Using children's bodies as vaccine carriers. Ten little children aged nine to fifteen."(Banu, 2019)

Preventive efforts for smallpox in the form of vaccination are the oldest efforts ever made to prevent disease in Indonesia (Uddin, 2006). According to Uddin, citing Pepper (2006), apart from smallpox vaccination, there is absolutely no other effort to develop public health care in Java. From the quote above, Dr. Jan Veldhart still positions children's bodies as biological bodies. The temporary body has not been constructed by something outside it. Children's bodies are used as a medium to reduce the spread of the plague. The body is inoculated. AdriaanGeest explained that first, the weakened smallpox germs would be taken, then rubbed into the children's arms so that the germs entered and formed blood pus. The side effect is that the body will chill, but not for long, and will immediately rise to conquer the disease. The child then becomes immune to smallpox. This was what the health workers wanted at the time. Vaccines that are still fresh on the bodies of children will be harvested for many people in Bali, both European and native. When this process is achieved, a stronghold of disease resistance will automatically be created in the middle of the residents. The body, in this case, is still closely related as a biological one that cannot be separated from medical matters. Inoculation, immunity, and vaccines are a line of words that have consequences for the biological-medical body.

However, it should not be forgotten that the short story "Variola" has the background of the spread of smallpox in 1871 in Bali, which was still under Dutch colonial rule. The characters are also a Dutchman, although written by writers from a post-colonial country (Indonesia), and at the time of the Dutch colonialism, they no longer physically exist. Colonial discourse in the past has always been left behind in post-colonial texts (Upstone, 2009). The body in the short story has been or remains marked by economic transactions and hierarchical relationships.

"It is difficult to persuade native parents from good families to let their children go alone outside Java." I shook my head. "We are obliged to bear the costs of the family members who accompany the children. If one child and one parent each

earn f50, it will take f1,000 for ten participants. Not including boat costs and meals. Unless we want to use homeless kids. "

"These children will earn f50 per person. We don't even mind if you withdraw funds for the maintenance of the home. We'll raise their wages to f75. If a supervisor escorts them, we will pay that person f75. "

The bodies that the colonialists wanted were from the natives and Europeans. The bodies of children through the two quotes above became the bought bodies. The body was valued with a nominal amount of money as a reward if parents were willing to give their child as a medium for vaccine donation. The body has lost its autonomy. The body has fallen into categories such as goods; they were bought for a certain amount of money, and the colonial health workers were entitled to use them. The principle of consumption also applies here; the body is useful as a storage medium for new vaccines.

The purchased body also contained elements of power relations between colonized communities and health workers as colonizers. The colonizers, with all kinds of exploitation in their colonies, obtained a lot of capital, especially money. Viewing from the historical context, the Dutch East Indies colonial government from 1830 - 1870 carried out a system of agricultural exploitation known as forced cultivation. This system aims to get the maximum benefit from plantation and agricultural activities in Java and several areas outside Java (Kanumoyoso, 2018; Hesselink, 2011). For the colonialists, this system produced financial benefits, but for the native people, it brought all kinds of suffering. Nearly half of the total number of Javanese people is involved in the system (Elson, 1994). Thus, the colonial authorities were able to pay for the bodies of needy children. The parents of the children were not all in a well-off economy, so the wage policy was justifiable. There are practices of imbalance behind the policy of providing wages to the body.

In addition to the body as a transaction and practice of power relations, the construction of body space can be seen from the difference in views between the figure AdriaanGeest and the priest Van Kijkscherp. In a dialogue between the two, while negotiating to get some children from the orphanage, AdriaanGeest said the following.

"... We both have a great task that may be different in ways, but the same in purpose, Lord Reverend."

As colonial parties, they used the word "we". Mr. Pastor carried on the notion of racism against the body during the colonial period. The Dutch East Indies government in the Colonial Law of 1854 divided society into three categories, namely, European, Foreign Eastern (Indo), and indigenous. This division was, of course, hierarchical in that the Europeans were above and superior. This division is then called the metaphoric body, namely the body in colonial discourse that can be divided. The Pastor disagreed that AdriaanGeest should bring the children of the orphanage he managed for several reasons.

"... Lord will take the blood of these white children to be mixed, even put into the bodies of the natives, and on another occasion, you will do the opposite. Right? Have you forgotten that you have to uphold the purity and holiness of God's holy body? Not mixing it up, either through adultery with a bitch, sexual intercourse with *Nyai*, or this kind of blood union. ... "

The purity and holiness referred to above are the bodies of white children. The Pastor, as a colonial representation, marks the body with ideas or knowledge about race. He drew a clear boundary line and defined that the white European class was pure, holy, and high bodies with low, dirty, and despicable bodies that were inflicted on the natives. As said by Upstone (2009), the chaotic picture has been overwritten by a rigid linear system; the differences are obscured by homogeneity. Thus, the colonial order was presented as natural and unquestionable.

Upstone, quoting Young (2009), calls the Pastor's knowledge description of the colonial obsession with body purity.

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The body of a European must be kept pure by not mixing his blood with native people (colored skin). Giving European children to be used as vaccine donors, where the vaccine will be introduced to Europeans and natives, means that the blood will mix. Hence, the pastor rejected him. He maintained colonial superiority by introducing a hegemonic structure to separate the different bodies in a hierarchy that was both lame and complex. Implicitly, the division of the body also shows that the body of the natives is associated with animal characteristics, namely savage, dirty, ignorant, and uncivilized. These characteristics would defile the body of a more pure and civilized white skin.

Lord Pastor's refusal was not only for reasons of the purity of white blood. As a priest, he thought in terms of religion, not least when the smallpox epidemic broke out. It is not a matter of funds, as promised by AdriaanGeest, so that the Pastor would give up the children.

"We object because you will put germs into the children's bodies."

"Do you realize that here you are trying to interfere in God's business?"

In Loedin's (2005) note, the fear and objection to surrender the children to be vaccinated is due to several reasons. First, rational refusal of smallpox vaccination because people are not sure (or do not know) about the benefits of vaccination. This reason is supported by the fact that children who are vaccinated still frequently contract smallpox, and some even die. Second, religious leaders oppose the vaccination policy because it is seen as a rejection of God's destiny. In his refusal, the Pastor even showed him a Bible which contains about 25 verses about destiny. He hoped that Geest would understand. God has wanted the smallpox epidemic to spread in such a way, and humans could not do anything about it.

"Read it. The point is, we cannot get in the way of God's plan. If the children caught smallpox and survived, that is God's "masterpiece" for His people. When they die, that is also His will. Nothing can be done between the two events."

Unlike the Pastor, as a health worker, Geest thought more rationally and entrusted the handling of the smallpox epidemic through vaccination. The "great task" referred to in the preceding quote, indicates a similar purpose in looking at the body. There is a compelling reason why Geest should have acquired a child's body. The following is an excerpt from the dialogue.

"Blood will mix. Because only in that way can the plague be prevented so that our civilization will live on and become a light here. "

From the quotation above, the children's bodies become media as well as representations of colonized positions as objects. Hierarchical power relations control the body. The body is constructed by the colonial discourse on white supremacists (colonizers) that they are a civilized group. This discourse is related to the Age of Enlightenment, which was marked by the rapid development of science and technology. Europeans have more advanced knowledge than other nations, so they feel superior. Through mastered science, the distinction between space and body boundaries is emphasized.

The word "civilization" shows the superiority of the colonizers in all aspects of life, mainly emphasizing rationality. They are advanced in education so that their way of thinking becomes more logical, and many people have special expertise in a certain field. Geestis a representation of the colonizers positioned as the subject of light. It indicates that there is an object in a dark state, which refers to a backward state, ignorant or uneducated, dirty, and uncivilized. Thus, the superiority of the colonizers appeared to make the natives more civilized.

The use of children's bodies as a medium for vaccine donors was an effort to preserve the colonial power in the

colony. They wanted to show that with a vaccine, the smallpox epidemic could be stopped, and the colonialists could continue its influence. Metaphoric bodies need to be saved but for the sake of colonialism to maintain their superiority. This is in line with the statement that the body in colonial construction was managed and regulated to fulfill the colonialists' advantage. So, the body became an important force for conquest, which would hegemonically legitimize the continuity of colonial discourse (Rahariyoso, 2017).

Human interaction between the colonizers and the colonized resulted in a body that was read and identified based on race type and skin color. Also, in the short story Variola, the body can be read based on psychological discourse related to traits or characters. Iksaka Banu presents a Dutch character who tries to save and make sacrifices to stop the spread of the smallpox epidemic. This is different from the colonized general view of the colonial character.

According to Heryanto, in his current nationalist history, European descendants are told only about torturing, extorting, and profiting in their colony lands¹. Whereas those who are not white appear as innocent creatures but always suffer and are humiliated. This difference is thought to stem from racial differences, giving rise to the view that all the good ones are indigenous. In contrast, all evil ones are not indigenous or colonialists, both European and Indo. The identification of such a body comes from an overly black and white oppressed view. Iksaka Banu wants to obscure this problem through the short story "Variola."

"Just a moment, sir. Head to Kenari Laan tomorrow afternoon. The third house after the crossroad, towards Meester Cornelis. I will wait for you there with five Mestizo children. Four men, one woman. It's quite a distance from here, but hopefully, it will help to stop the malignant smallpox epidemic in Bali. "

"They are my children, sir. Before marrying my European wife, I lived with a native woman. ... "

After receiving a rejection from the Pastor, Geest received a gift from HendrickPlathart's children's bodies. The bodies of the invaders, which were initially considered evil, oppressive, and arbitrary to the natives, were ruined by Iksaka Banu through the depiction of Hendrik Plathart, who was willing to sacrifice his children's bodies as a medium for vaccine donation. The superiority that was exalted by the Pastor regarding the purity of blood was violated by Hendrik to save the people. Iksaka Banu did not reverse the situation that the natives became evil while the colonialists always did the good deed.

"I stared at this clean round face in front of me, which in the darkness of the evening seemed to glow under a gas lamp, emitting light of piety as well as the embers of hellfire. I shook his hand once again."

Geest considered Hendrik having done the good deed so that it is natural that the light of piety should shine. However, his kindness seemed paradoxical when Geest said Hendrik's face was radiating the embers of hell at the same time. As a worker in the orphanage, Hendrik ought to obey the rules of the orphanage and also the restrictions created by the Dutch East Indies government. The children who were sacrificed came from an unarguably legitimate relationship with a native woman. They are called *Nyai*. Hendrik still chose and married his European wife. This knowledge refers to the colonial discourse on how the colonizers used the bodies of indigenous women to help their lives in both household and bed affairs, but they were never fully recognized. The colonizers needed the body of an indigenous woman, but on the other hand, they still chose and recognized European women as their wives. Thus, Hendrik's sacrifice and kindness stood up and curled back towards the discourse of blood purity and the superiority of whites over natives and lesser Mestizos.

CONCLUSIONS

Vaccination: Saving or Superiority Averment? the Body Space Short Story "Variola" Written by Iksana Banu in Perspective of Spatial Politics Sara Upstone

Based on the analysis of the problem in Iksaka Banu's Variola short story by using the post-colonial body space perspective of Sara Upstone, the researcher can draw the following conclusions. The body in the short story "Variola" is not an autonomous body. At first, the body was positioned as a biologic-medical medium for vaccine donation. Through the narrative of salvation, children's bodies were then used as colonial spaces marked by discourses of blood purification and white racial supremacy. The practice of marking was aimed at instilling and or affirming the superiority of the West as a colonial state. The superiority that was deliberately constructed by the colonizer caused inequality so that the colonized became the object of illumination or civilization.

The appearance of the Dutch figure and his character through the sacrifices made by Hendrik Plathart, on the one hand, is chaos in the general view of the psychological discourse that all colonizers were evil. However, on the other hand, the sacrificial bodies of children born from relationships with indigenous women are still trapped in the discourse of blood purification. Hendrik prefers European women to be wives and indirectly supports Geest's mission to keep the colonial civilization alive and become lights in the colonies.

REFERENCES

- Anum, A., & Apriyanto, S. (2019). Detecting Gender'S Strategies in Learning Speaking. Premise: Journal of English Education, 8(1), 57. https://doi.org/10.24127/pj.v8i1.1932
- Apriyanto, S., & Anum, A. (2020). Personality of Politicians as the Object of Public Assessment. https://doi.org/10.4108/eai.20-9-2019.2290820
- 3. Apriyanto, S., Dalman, & Santoso, D. (2020). The urgency of forensic linguistics in a police interrogation process. International Journal of Psychosocial Rehabilitation, 24(6), 4766–4772. https://doi.org/10.37200/IJPR/V24I6/PR260467
- Apriyanto, S., & Nurhayaty, A. (2019). Born In Social Media Culture: Personality Features Impact In Communication Context. In Y. Nasucha (Ed.), icollit (pp. 167–175). UMS Press. icollit.ums.ac.id/2018
- Baha'uddin. 2006. Dari Mantri hinggaDokterJawa: StudiKebijakanPemerintahHindia Belanda dalamMenanganiWabahCacar di Jawa Abad XIX – XX. (Online) JurnalHumaniora Volume 18, hlm. 286 – 296.
- 6. Banu, Iksaka. 2019. Teh dan Pengkhianat. Jakarta: Gramedia.
- 7. Bazeley, P. (2013). Qualitative Data Analysis (J. Seaman (ed.); 1st ed.). SAGE Publication. https://doi.org/10.1080/14780887.2014.992750
- 8. Creswell, J. (2014). Research design: Qualitative, Quantitative, and Mixed Methods Approaches (V. Knight (ed.); Fourth Edi). SAGE Publication. https://doi.org/10.4135/9781849208956
- 9. Elson, R.E. 1994. Village Java Under the Cultivation System 1830 1870. Sydney: ASAA.
- 10. Farid, Hilmar, Seno GumiraAjidarma, Katrin Bandel, dkk. 2018. Simposium: Pascakolonial dan Isu-isuMutakhir Lintas Disiplin. Lebak: Dinas Pendidikan dan KebudayaanKabupatenLebak.
- 11. Faruk. 2012. MetodePenelitian Sastra: SebuahPenjelajahan Awal. Yogyakarta: Pustaka Pelajar.
- 12. Hardiningtyas, PujiRetno, dkk.OtoritasTubuhantaraSakral dan ProfandalamPuisiKaryaPenyair Bali Tahun 1970 2016. JurnalAksara, Vol. 30, No. 1, Juni 2018.
- 13. Hidayat, O., Apriyanto, S., Program, P., Science, A., Tun, U., & Onn, H. (2019). Drama Excerpt : Tool in Enhancing Speaking Ability for Junior High School. 2(3), 1–9.

- 14.
 Heryanto,
 Ariel.
 2016.
 RasismeSebelum
 dan
 SesudahKemerdekaan
 RI.

 https://www.cnnindonesia.com/nasional/20160812104757-21-150900/rasisme-sebelum-dan-sesudah-kemerdekaan-ri/diakses

 pada 25 Juli 2020 pukul 20.31.
- 15. Hesselink, Liesbeth. 2011. Healers on the Colonial Market: Native Doctors and Midwives in the Dutch Indies. Leiden: KITLV Press.
- 16. Husein, Ismail H Mawengkang, S Suwilo "Modeling the Transmission of Infectious Disease in a Dynamic Network" Journal of Physics: Conference Series 1255 (1), 012052, 2019.
- 17. Husein, Ismail, Herman Mawengkang, SaibSuwilo, and Mardiningsih. "Modelling Infectious Disease in Dynamic Networks Considering Vaccine." Systematic Reviews in Pharmacy 11.2, pp. 261-266, 2020.
- MuqdadIrhaeemKadhim, Ismail Husein. "Pharmaceutical and Biological Application of New Synthetic Compounds of Pyranone, Pyridine, Pyrmidine, Pyrazole and Isoxazole Incorporating on 2-Flouroquinoline Moieties." Systematic Reviews in Pharmacy 11 (2020), 679-684. doi:10.5530/srp.2020.2.98.
- 19. HamidahNasution, Herlina Jusuf, EviRamadhani, Ismail Husein. "Model of Spread of Infectious Diseases." Systematic Reviews in Pharmacy 11 (2020), 685-689. doi:10.5530/srp.2020.2.99.
- Husein, Ismail, DwiNoerjoedianto, Muhammad Sakti, AbeerHamoodi Jabbar. "Modeling of Epidemic Transmission and Predicting the Spread of Infectious Disease." Systematic Reviews in Pharmacy 11.6 (2020), 188-195. Print. doi:10.31838/srp.2020.6.30
- Husein, Ismail, YD Prasetyo, S Suwilo "Upper generalized exponents of two-colored primitive extremal ministrong digraphs" AIP Conference Proceedings 1635 (1), 430-439, 2014
- 22. Husein Ismail, RahmadSyah, "Model of Increasing Experiences Mathematics Learning with Group Method Project", International Journal of Advanced Science and Technology, pp. 1133-1138, 2020.
- 23. S Sitepu, H Mawengkang, I Husein "Optimization model for capacity management and bed scheduling for hospital" IOP Conference Series: Materials Science and Engineering 300 (1), 01,2016.
- 24. Kholidah, Ucy Elly. KonstruksiTubuhdalamCeritaPendekKeroncongPembunuhanKarya Seno GumiraAjidarma. JurnalTelaga Bahasa, Vol. 5, No. 1, Juni 2017: 143 – 158.
- 25. Loedin, A.A. 2005. Sejarah Kedokteran di Bumi Indonesia. Jakarta: Graffiti Press.
- 26. Rahariyoso, Dwi. 2017. KonstruksiTubuh Joko Pinurbo: Ruang Pascakolonial di BalikCelana dan Di Bawah KibaranSarung. Yogyakarta: Araska.
- 27. _____. 2014. Paradoks Ruang TubuhdalamPuisi "Sakramen" Karya Joko Pinurbo: Kajian PascakolonialTubuh Sara Upstone. JurnalPoetika, Vol. II, No. 1, Juli 2014, hlm. 43 54.
- 28. Santoso, D., & Apriyanto, S. (2020a). ITB Student's Suicide Notes Case : Forensic Linguistics Analysis. 11429, 11429–11435.
- Santoso, D., & Apriyanto, S. (2020b). Pragmatics implicature analysis of police interrogation: Forensic linguistics analysis. International Journal of Psychosocial Rehabilitation, 24(6), 115–124. <u>https://doi.org/10.37200/IJPR/V24I6/PR260009</u>
- 30. Silverman, D. (2013). Doing Qualitative Research (Katie Metzler (ed.); Fourth Edi). SAGE Publication. https://doi.org/10.1007/s13398-014-0173-7.2
- 31. Udasmoro, Wening. 2011. BagaimanaMeneliti Sastra: MencermatiMetodologi Dasar dalamPenelitian Sastra. Yogyakarta:

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Vaccination: Saving or Superiority Averment? the Body Space Short Story "Variola" Written by Iksana Banu in Perspective of Spatial Politics Sara Upstone

Program Studi Sastra Prancis.

32. Upstone, Sara. 2009. Spatial Politics in the Postcolonial Novel. England: Ashgate Publishing Limited.