

Reproductive Techniques in the Mahabharata: A Review Article

Neupane K¹  

Lecturer, Department of English, Patan Multiple Campus, Patandhoka, Patan, Nepal

ABSTRACT

Introduction: This study highlights how the Mahabharata, a narrative epic, describes reproductive methods that presage contemporary reproductive procedures and familial connections. These include extracorporeal gestation, niyoga (surrogate reproduction), divine conception, ayonija birth (non-womb birth, embryo splitting, proto-epigenetics, and social constructions found within the Mahabharata.

This research seeks to explore how the Mahabharata, an epic, presents reproductive techniques, foreshadowing modern procreative practices and kinship arrangements. It unveils extracorporeal gestation (development outside the body), niyoga (proxy reproduction), divine conception (non-human genetic agency), ayonija birth (non-womb birth), embryo division, proto-epigenetics and socially constructed practices used in the epic.

Objectives: This review aims to explore the reproductive concepts in the *Mahabharata* and meaningfully relate to modern reproductive technologies, especially with ethical complexity, kinship, and the separation of biological, gestational, and social roles.

Methodology: This study will use a qualitative methodology to study a chosen set of reproductive stories from the Mahabharata through a medical humanities perspective by drawing parallels between ancient and contemporary reproduction practices.

Results: The *Mahabharata* presents multiple reproductive models. Niyoga and divine conception employ mediated reproduction. These forms separate biological, social, and gestational parenthood. In Kunti's case, selective reproduction is evident. Ambika and Ambalika experience psychological influence in childbirth. In the case of the Kauravas, extracorporeal development is observed.

Conclusion: These observations suggest that reproductive themes from the Mahabharat have a significant connection with modern reproductive technology in terms of ethics, kinship ties, and dissociation between biological, gestational, and social aspects.

Keywords: Mahabharata; Medical Humanities; Assisted Reproduction; Kinship; Reproductive Ethics

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Address for correspondence

Dr. Khagendra Neupane
Lecturer,
Department of English,
Patan Multiple Campus,
Patandhoka, Patan, Nepal
E-mail: kpsharma26@gmail.com

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INTRODUCTION

The Mahabharata cannot be analyzed as an empirical, historical, and scientific text. It is a blend of mythology, philosophy, culture, and symbolism. As such, its reproductive narratives can be observed as symbolic representations of reproduction. However, these narratives can be compared within the context of modern assisted reproductive techniques, such as in vitro fertilization, embryo manipulation, and surrogacy.

The includes diverse tales of reproduction that go beyond the standard notion of biological reproduction. Stories like that of the Kauravas' births, the birth of Drona, and various instances of ayonija characters include examples of extracorporeal or non-sexual reproduction.



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These narratives construct reproduction as a matter of mediation, intention and dispersal through multiple entities. The terms "niyoga" and divine conception are good examples of the differentiations of biological, gestational and social motherhood.

Studies illustrate the impact of reproductive technologies on conceptions of kinship and identity. Sarah Franklin notes that reproductive technologies like IVF call into question biological kinship by putting reproduction squarely into both biology and technology.¹ Marilyn Strathern demonstrates that the current reproductive processes separate biological parenthood from social and legal parenthood.² Donna Haraway challenges the boundary between nature and technology in favor of hybrids created through technoscience, whereas Charis Thompson discusses ontological choreography.^{3,4} Shulamith Firestone asserts that reproductive technologies have impacted gender relationships.⁵ Third-party reproduction entails distinctions in genetic, gestational and parenting processes, according to Ardakani et al.⁶ Ginsburg and Rapp argue that reproductive technologies are determined by culture and politics and not simply by biology.⁷ Bioethics scholars such as Leon Kass have raised questions about dignity and bounds of intervention.⁸ Debiprasad Chattopadhyaya draws attention to the existence of proto-science in the Indian literary tradition, which is always set within a cultural context, whereas Meera Nanda emphasizes the necessity of situating science in mythology.^{9,10} The epic includes examples of abnormal conception. These include the division of the embryo in Gandhari's case and conception in an artificial womb in Drona's case.¹¹ This serves as a symbol, not as a scientific account, but has similarities to contemporary reproductive techniques like IVF (In Vitro Fertilization).

METHODOLOGY

The research adopts a qualitative approach. Narratives in the Mahabharata are analyzed as a primary source. Asexuality, extracorporeal conception, and mediated reproduction have been selected for analysis. In secondary data collection, a literature review has been done through the medical humanities, anthropology, and bioethics disciplines. The medical humanities show how culture, ethics, and experience shape ideas about the body and reproduction. The anthropological analysis will consider these narratives and demonstrate how they conceptualize the social construction of kinship, lineage, and parenthood, rather than treating them biologically as involving different agents in the process of reproduction. Reproductive narratives in the selected stories have been

analyzed as cultural constructions, using textual analysis techniques, and analogies to biomedical processes have been identified. Sources of data include academic literature databases and texts concerning themes such as assisted reproduction technology, kinship, and bioethics. The identified narratives are then analyzed and compared with modern-day forms of reproduction, namely in vitro fertilization and embryo manipulation

RESULTS

From the review, it becomes apparent that the Mahabharata presents multiple reproductive models aligned with the medical humanities. Narratives like the birth of the Kauravas and Drona illustrate life developing outside the maternal body. Mediated reproduction appears in niyoga and divine conception, separating biological, social and gestational parenthood. The findings also indicate selective reproduction. Kunti's case shows intentional influence over offspring, paralleling genetic selection debates. The case of Karna depicts the aspect of secrecy in relation to identity issues because of the hidden origin of child. The review links maternal psychological state to fetal outcomes in the cases of Ambika and Ambalika, much similar to epigenetic concepts. Gandhari's prolonged gestation reflects reproductive unpredictability and abnormal outcomes. Reproduction in the epic is biological, social, ethical and political process. These findings provide a basis for discussing its link to medical humanities.

DISCUSSION

This section uses the methodological approach used in the research paper to interpret the chosen reproductive narrative using perspectives of medical humanities, anthropology, and biomedicine. The medical humanities perspective is useful in the analysis of the body, pain, identity, privacy, and ethics. The anthropological perspective emphasizes kinship, lineages, parental identities, and cultural control of reproduction. The biomedical perspective enables a symbolic comparison with modern-day assisted reproductive technologies without taking the epic texts as literal accounts of biological practices. Under this approach, the epic reveals various reproductive motifs such as extracorporeal gestation (outside the body), niyoga (stand-in reproduction), divine conception (genetic manipulation by non-humans), ayonija births (births not in the womb), embryo splitting, and proto - epigenetics and socially constructed. The birth of Kauravas reflects the motif of extracorporeal gestation. After an unusually prolonged pregnancy, Gandhari, the wife of Dhritrashtra, gives birth to a single undifferentiated flesh-like mass. The sage Vyasa

asks her to cut mass into one hundred fragments. Each is placed into a separate vessel filled with ghee and kept carefully until they develop into individual offspring.¹¹ Later, the one hundred Kauravas are born out of the flesh. The epic narrative depicts development occurring independently outside maternal body. The womb is no longer required for gestation. Growth is transferred to an external, controllable environment based on knowledge and technique. This episode allows symbolic comparison with modern reproductive technologies because it separates biological origin, gestational space, and technical intervention. In this sense, Vyasa's intervention conceptually resembles the modern concept of in vitro fertilization and artificial wombs. In the modern techniques, early development stages occur outside the body under regulated environment. This story of the epic parallels the embryonic division in which a single biological origin is divided into multiple individuals. Each develops independently and raises questions about individuality, identity and shared origin in both the epic and bioethics. Cloning and manipulation appear symbolically in the story of the Kauravas. Gandhari gives birth to a mass of flesh which is divided into multiple parts that develop into individual beings.¹¹ This raises questions about individuality and identity, since multiple individuals originate from a single source. The episode also highlights manipulation and control in reproduction. Donna Haraway suggests that modern biotechnologies challenge traditional ideas of identity and raise ethical questions about control over life.³

The birth of Drona portrays that the individual is born in a vessel. It suggests that life can emerge outside of mother's womb.¹¹ Rose N, a biological theorist, argues that modern technologies decouple reproduction from the female body enabling life to be sustained and produced outside it, reshaping biological origin and embodiment.¹² This perspective aligns with modern embryology and reproductive technologies. The in vitro fertilization involves fertilizing an egg outside the body and developing the embryo in vitro before putting into the uterus. Embryo splitting involves dividing an embryo to produce genetically identical twins. Though rarely used in humans, it shows that reproduction can be technologically controlled, divided and sustained outside the body. S. Jasanoff argues that these technologies render reproduction a controlled and distributed process across multiple sites rather than confined to the maternal body.¹³ Reproductive technologies challenge traditional notions of inheritance and motherhood. The epic narratives reflect embryological ideas of staged development and extracorporeal nurturing. Vyasa's

expertise highlights the role of specialized knowledge in medicine just as embryologists manage fertilization, control conditions and monitor growth. The creation of beings from a common origin yet recognized as distinct individuals raises questions of individuality. Waldby and Cooper argue that advances in reproductive technology disrupt traditional notions of personhood by separating genetics, gestation and identity.¹⁴ The epic does not predict IVF or embryo separation; however, it presents reproduction as an external, separable and mediated process.

The epic introduces next reproductive technique, ayonija, that involves birth occurring outside maternal womb. It does not require embryonic development within the female body. In the epic, life emerges from vessel, fire and non-human processes. Drona, the teacher of the Pandavas, is born from a vessel (Drona) in which his father, the sage Bharadwaj, preserves male reproductive cells. Draupadi and Dhrishtadyumna emerge from sacrificial fire. This narrative shows the significance of the creation of life without pregnancy and emphasizes the creation of being beyond biological reproduction. This technique is different from the approach used in the creation of the Kauravas. The origin of the Kauravas from Gandhari reflects a hybrid technique as it involves both the maternal womb and extracorporeal development. Van Balen F and Inhorn MC note that such stories conceptualize procreation outside the human body, anticipating debates on assisted reproduction and the outsourcing of biological functions.¹⁵ In vitro fertilization transfers fertilization and early embryonic development to a laboratory setting. The births in the epic do not parallel modern technology. They challenge the view that the uterus is the sole site of pregnancy. F. Van Balen and MC. Inhorn note that new reproductive technologies place childbirth under controlled conditions. This undermines the idea that only the female body can support development.¹⁵ From medical humanities perspective, such episodes in the epic function as metaphors of boundary crossing. The displacement of pregnancy raises questions about whether birth and motherhood depend on genetics, gestation or sociocultural recognition. These questions arise in surrogate parenting, donor conception and extra-uterine fetal development. The ethical issue of ayonija focuses on responsibility that arises when birth is removed from the female body. The epic suggests that the social dimension of birth may have long been distinct from the biological one. Sarah Parry observes emerging reproductive technologies raise ethical questions about parenthood and responsibility. This

complicates traditional notions of responsibility and parenthood.¹⁶ The epic does not depict embryo transfer in biomedical terms. It presents mediated reproduction separating genetic, gestational and social parenthood across different agents.

The epic narrative highlights another reproductive technique called *niyoga*. It is a crucial practice used in the story to preserve royal lineage of the Kuru dynasty when biological heirs could not be produced through conventional marriage. It is performed under duty and a ritual and controlled act aimed at preserving lineage and political order. This approach separates biological and social fatherhood, emphasizing psychological influence on birth. It treats reproduction as managed and intentional process. In the epic, *niyoga* institutionalizes reproduction as a socially regulated process. In the approach, biological paternity succumbs to lineage continuity. It separates genetic, gestational and social dimensions of parenthood. After the death of the king Vichitraviraya, his mother Satyawati encounters a dynastic crisis. She invites her son Vyasa to perform *niyoga* with her widowed queens Ambika and Ambalika. During *niyoga*, Ambika, closing her eyes in fear, gives birth to a blind child called Dhristrashtra and Ambalika, turning pale, delivers a weak and pale child Pandu. A maid with calm and composed posture being involved in *niyoga* practice gives birth to a wise and healthy child named Vidur. In this way, Vyasa impregnates women on behalf of a deceased king to continue his lineage. Biological parenthood is separated from social parenthood. According to Ganguli, Vyasa visits the widows at Satyawati's instruction to produce heirs for the royal lineage. The offspring are socially regarded as descendants of the late king rather than Vyasa.¹¹ The *Mahabharata* links maternal psychological state to offspring. Ambika closes her eyes in fear and bears a blind child. Ambika turns pale and bears a pale child.¹¹ This resembles modern ideas of epigenetics, where environmental and psychological factors influence development. *Niyoga* stands out as an example of donor conception. Vyasa impregnates the widows of Vichitravirya to ensure continuation of the lineage.¹¹ This reflects a division between biological and social fatherhood. Modern sperm donation similarly separates genetic and social parenthood. Chris Thompson explains that assisted reproduction separates biological contribution from social parenthood. Kinship is structured through intention and recognition, not biology alone.⁴

Another interesting reproductive method is divine intervention used in the epic to sustain royal legacy. The conception of the Pandavas through divine

means replaces biological paternity. Kunti, the wife of Pandu, faces crisis of succession after her husband dies being cursed if he engages in sexual intercourse. She possesses a mantra that allows her to invoke gods and conceive children. Kunti bears sons from different gods as she gives birth of Yudhishthira from Yama (the god of dharma), Bhima from Bayu (the god of wind) and Arjuna from the god of rain. In this case, Pandu is a social father whereas the divine beings are their biological progenitors. This narrative can also be linked to modern surrogacy, where reproduction involves multiple participants and separates gestational and social motherhood. Similarly, the *Mahabharata* presents parenthood as distributed across biological, divine, and social domains. Divine conception parallels the assisted reproductive technologies. Inhorn MC and Birenbaum-Carmeli D. argue that assisted reproductive practices separate parenthood into genetic, gestational and social components. This creates a more negotiated form of kinship.¹⁷

In contemporary reproduction, embryo transfer places an artificially conceived embryo in a gestational surrogate's womb. A distinction exists between the genetic mother, the gestational carrier, and the intended parents. The epic does not describe identical procedures. It presents parenthood as deriving from multiple sources rather than a single biological origin. According to Ganguli's version, children conceived through indirect unions belong to the family lineage through social recognition, not biological origin alone.¹¹ The stories depict social kinship grounded in roles and obligations, not purely biological descent. Contemporary practices show similar patterns. Moral dilemmas arise around consent, responsibility, and identity. The stories depict social kinship grounded in roles and obligations, not purely biological descent. Contemporary practices show similar patterns. Moral dilemmas arise around consent, responsibility and identity. E. Teman observes that assisted conception affects kinship biologically, legally and socially.¹⁸ Biological reproduction without sexual intercourse appears in the epic. True parthenogenesis is not described. Certain stories function as parallels. Ganguli explains that Drona is born from a vessel containing reproductive material without maternal involvement.¹¹ Draupadi and Dhristadyumna are born from sacrificial fire without sexual reproduction. These examples show reproduction without intercourse. Modern science includes techniques such as in vitro fertilization and intracytoplasmic sperm injection. Lock M and Nguyen V-K note that modern reproductive technologies separate reproduction from sexuality. Reproduction shifts into controlled laboratory environments.¹⁹ Induced

ovulations are a medical practice using drugs to regulate ovulation. The epic does not describe pharmacological methods. It presents controlled timing of conception. Kunti receives a mantra from Durvasa that allows her to invoke gods at specific times and bear children with distinct qualities.¹¹ This represents a cultural technology of timing involving intention, ritual and knowledge. Strathern explains that modern reproduction has become a controlled process of timing.² Kunti's selection of gods resembles modern discussions of pre-implantation genetic selection, even though it is culturally rather than biologically determined. The episode in the epic reflects that genetic inheritance solely does not determine biological outcomes. Margaret Lock and Nguyen V-K explain that biology is shaped by social and environmental conditions alongside genetics.¹⁹ Another aspect is Gandhari's prolonged and abnormal pregnancy. She carries the fetus for an extended period and gives birth to an undeveloped mass.¹¹ It reflects unpredictability and complications in reproduction. Arthur Kleinman notes that illness and bodily conditions must be understood through both biological and emotional experience.²⁰ The Mahabharata also presents a tension between control and destiny. Human interventions such as mantra and *niyoga* exist within a larger framework of fate. The births of the Pandavas are guided by cosmic order.¹¹ Nikolas Rose asserts that modern biomedicine seeks control over life processes, yet uncertainty remains.¹² The inclusion of Arthur Kleinman, Jürgen Habermas, and Michel Foucault makes it possible to consider reproduction outside the narrow scope of biology. While Arthur Kleinman emphasizes the cultural dimension of bodily experience, Jürgen Habermas provides rationale for moral deliberation regarding interference in the process of reproduction, and Foucault helps explain how reproductive practices are shaped by power, institutions, and governance. Together, their work supports an interdisciplinary medical humanities interpretation rather than a strictly biomedical reading. Reproduction in the epic is also linked with secrecy, identity and power. Kunti's selection of gods reflects attempts to influence offspring traits.¹¹ These parallels modern debates on genetic selection. Jürgen Habermas argues that such practices raise ethical concerns about autonomy and human design.²¹ The secrecy surrounding Karna's birth reflects issues of identity and stigma. Susan Golombok explains that knowledge of biological origins is important for identity formation.²² Reproduction is also connected to power structures. It is influenced by social, political, and institutional forces. Michel Foucault highlights that reproduction is shaped by systems of governance and control.²³ The Mahabharata presents

reproduction as occurring within a framework of duty, destiny and power. The Mahabharata presents reproduction through interconnected dimensions of choice, secrecy and power. These narratives offer insights into contemporary debates in medical humanities. They show that reproduction is not only biological or technological but also ethical, social and political phenomena.

CONCLUSION

This study correlates reproductive narratives in the Mahabharata with contemporary reproductive technologies through a medical humanities framework. The analysis shows conceptual parallels with mediated reproduction, extracorporeal development, and the separation of biological and social parenthood. Reproduction in the Mahabharata is not only a biological phenomenon. It involves intention, ritual, knowledge and social responsibility. It appears in forms such as *niyoga*, divine conception and *ayonija* birth. This indicates reproduction can occur beyond normal biological processes. The text presents concepts resembling extracorporeal development, donor insemination and partitioned parenting. Biological, gestational and social parenthood appear as a separate aspect of reproduction in the epic. Medical humanities frames reproduction as a biopsychosocial process. Maternal emotional state affects the body. Reproduction is uncertain. It shows variation. The stories present ethical dilemmas around control and intervention. Questions of identity, individuality and responsibility arise. Contemporary advances such as IVF and genetic screening create similar issues. Moral and philosophical dilemmas arise with human intervention in reproduction. Another contradiction in the Mahabharata is between control and destiny. Human decisions influence reproduction. Not all processes are under human control. Reproduction occurs within a broader framework of duty, authority and fate. It is externally mediated and not isolated from society, politics and culture. There are themes of choice, secrecy, and power. They are still significant topics in modern times. The Mahabharata contains a philosophical interpretation of the reproductive process. The Mahabharata shows social mediation of reproductive practices. The stories present enduring dilemmas. They inform medical humanities research. Within medical humanities, these narratives present reproduction as a culturally mediated and ethically complex process, not only a biological function. They help examine reproductive ethics, identity, and technological intervention across medicine, the humanities, and the social sciences. The epic frames reproduction through

choice, secrecy and power. These narratives illuminate contemporary debates. Reproduction is a biological, technological, ethical, social, and political phenomenon.

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