

METHODOLOGICAL PAPER

Śāstric Method in Aid of Modern Theory Making

Dr. Vaishnavi Nishankar

Deputy Director, Knowledge Products, Siddhanta Knowledge Foundation

The line between what is science and what is pseudoscience is evident from how phenomena are observed, experimented, explained and validated for accuracy and precision, in other words, how theorisation of events and phenomena occur in nature. This then aids in predicting and controlling the events / phenomena, thereby making the scientific endeavour useful.

Where explanation is not reason based but rooted in faith alone, does not show precision across multiple occurrences of events consistently or does not produce same results under similar conditions to foster predictability, it is apprehended as pseudoscience.

The robustness of theorisation majorly depends, among other factors, on the rigour of methodology used to arrive at valid knowledge and the depth of exploration to which the tools of research can help us reach. So, if our theorisation of some physical phenomenon is aided by tools that can magnify an object to 200X of its size, we can explain its nature and behaviour to that extent through observation, experimentation etc, but beyond that, the layers of the object may not be discernible till we have tools of a higher version.

The methodology of arriving at a theory gains veracity when equipped with structures and frameworks of knowledge that systematically govern the research through varied processes and stages of research, which may involve dealing with the phenomenon externally, as in case of physical observation etc and internally with reasoning, prediction, evaluation of evidence etc. We find several such structures and frameworks of theorisation in modern research.

We find that Indian thinkers have distilled knowledge building, including theorisation, with some structures, methodologies and frameworks that work across domains, are simple in usage yet powerful in creating well formed theories by governing the researchers to navigate knowledge building by answering pointed queries that the knowledge structures raise from stage to stage. The theory building methodologies and structures are largely common across domains including technical ones. This makes it a candidate to be explored for effective modern theory making also.

Śāstric methodology has a unique approach to arriving at theories. Here, theory making is not the objective of exploration, nor is just the application of the theories, but creating a knowledge body to disseminate the truth arrived at about the content of study. That is, a Śāstra is not an outcome of research but a report of research that enables the audience researcher to arrive at the truth envisaged by the master researcher, a communication of research results, which therefore requires a systematic presentation to deliver authenticated knowledge.

It is for this purpose that the definition of a śāstra commences with the criterion that ‘śāstra is a body of statements that are agreeable to both the speaker (the master researcher) and the listener (the audience researcher)’.

The agreement could be arrived at only by resolving all apprehensions, doubts and counter hypotheses posed by the audience researcher, satisfactorily. Starting from appealing to the reasoning of the listener to facilitating in experiencing the truth envisaged by the speaker, the process of research comprehensively comes a full circle in knowledge creation to dissemination, in their agreement. Theorisation therein, is just a formal process that acts as the axle of this full wheel.

In fact, the definition of śāstra includes two more integral factors – it is undertaken to achieve a result / objective / purpose not proven / established by any other (knowledge body); and it establishes knowledge not accomplished by any other means.

This ensures that a theory fitting this description would be unique in content and would resolve a research query not dealt with hitherto.

The master researcher arrives at the knowledge of truth through a more abstract process, which goes beyond the scope of this paper. As a communication leading to truth, śāstric method of theorisation is stringent in its execution, which then starts and proceeds through a series of robust knowledge structures that granularly attempt to achieve veracity of the content and of the process of theory creation.

Truth, is sought by the curiosity to know it – jijñāsā, based on the query of, say, ‘what is this world about?’. Once the master has arrived at the culmination of inquiry, comes the time of imparting it systematically in the form of a theory. A theory is practically a syntactic model of truth envisaged by the master researcher. It uses language to describe this truth, the research content using some knowledge structures like:

Anubandha-catuṣṭaya – The mandatory framework, a quartet of connectors that relate the (i) content of research with a specific (ii) purpose, (iii) its eligible audience and (iv) the relation between the three. This sets the technical scope, purpose and application of theorisation as useful to a specific technical audience.

Śāstra-nirṇaya – The structure providing the most optimal categorisation of the research content, most faultless and unambiguous technical definitions, tested with proofs, and arriving at theoretical conclusions.

Adhikaraṇa – The structure validating theories by subjecting to inquiry of a research question, by addressing doubts, counter hypotheses, apprehensions, prima facie arguments, objections etc, responding with evidence and reasoning to provide answers to the queries raised, and with the approval of a mediator / reviewer, arriving at conclusive theories.

Pañca-avayava-vākya – The syllogistic parts of arriving at reasoning in the order of presenting – hypothesis – the indicative reason – the substantiating illustration – the application of illustration to actual scenario – conclusion. Though it is a framework developed in the school of

Nyāya, the Indian logicians, this structure, with adjustments in some cases, is adopted by all other schools of Indian knowledge as a useful structure to validate theories on a reason based approach.

Saṅgati – A methodology presenting a sequence of research topics in a cogent and coherent succession by enunciating the logical connection and contextual relevance of the discussion of a successive topic at a specific point in theorisation.

Tātparyalinga – Methodology of applying the parameters / markers that aid in arriving at purport of theories, including, its concurrence at the synopsis and conclusion of the theory, its emphasis reinforced in exposition, its uniqueness highlighted in discussion, its strengths / advantages enlisted across the theory, its purpose / application stated for which theorisation is pursued and the reason based justification pointing to the purport of theorisation.

Tantrayukti – The technical conventions that set the scope, parameters, structures that bind a theoretical treatise to ensure there is no syntactic or semantic laxity in rendering a technical theory literature. Some such conventions are statements of back referencing, forward referencing, objection, authoritative instruction, categorical emphasis, exceptions, definition etc.

These knowledge systematisers have been found applied to both empirical and non-empirical domains of research and support inductive, deductive, abductive and normative research methods.

Apart from the enumerated research methodologies and structures, we find that individual Indian knowledge domains also created their own ones like, for instance –

- The Nyāya thinkers create a technical language of relations to express ontological, epistemological and other relations that connect the objects and events in the world, in cognition and in language.
- Ayurveda employs a diagnostic framework guiding its practitioners for treatment of disease.
- Mīmāṃsā system has its own methodology of hermeneutics with regards to referencing, fixing context, evaluating weightage of evidence etc.

Apart from these knowledge builders, śāstra-s also embody the four domains of propagation that aid in course correcting, updating and transmitting theories which are – practice of knowledge discipline, teaching-learning, debate-dialectics-polemics and the tradition of commenting, each with its own systematic SoP of conducting the propagation in consonance with truth, being in integrity.

Śāstric insights in theory making

Theories are derived using a systematic process and most times the theorisation clearly states an abstraction or a synopsis of the study with delineation of the objective / expected outcome of the study. The hypothesis considered as the starting point of the research of which a theory is to be concluded of is also stated as a constituent of theorisation. In śāstras we find a similar framework known as Anubandha-catuṣṭayam. Anubandha refers to connection and catuṣṭayam

means a quartet. Together, they mean the four connectors – in the context of theorisation, they represent the cognitive connectors to be considered before embarking on the research journey. The four connectors are:

Viṣaya: The subject matter / content of study

Adhikārin: The eligible recipient of result of study

Prayojana: The purpose of study

Sambandha: The relations between viṣaya-adhikārin, adhikārin-prayojana and viṣaya-prayojana

Viṣaya, is a common constituent of research proposal in both mainstream and shaastric theorisation.

So is prayojana, the purpose of research, which may be in the form of application, discovering truth pertaining to certain phenomena or innovation of new processes, methods or practices or derivation of knowledge models.

Adhikārin or eligible user / learner of the theory is clearly stated in the śāstric framework. In the Indic tradition, the researcher and the audience are participants in the knowledge creation process. A theory is not just an outcome but a report that enables the audience (researcher) to arrive at the truth envisaged by the master researcher. This requires the resolution of all apprehensions and counter-hypotheses (pūrva-pakṣa) through systematic presentation. As the cogniser, adhikārin is an important participant of knowledge, not because she / he will influence the theory contributing to its subjectivity, which is better avoided as per scientific methodology, but because it helps clarify if the intentions of research meet its end user / learner or not and if there is enough preparedness in the adhikārin to engage with the theory and its prayojana (outcomes).

Sambandha establishes the connection between:

- The viṣaya and the adhikārin: to verify that the adhikārin has the required readiness and qualification to engage with, analyse, assimilate and utilise the theory for the purposes envisaged
- The adhikārin and the prayojana: to ensure that there is concurrence between the adhikārin's intent and the outcome of the theory
- The viṣaya and the prayojana: to emphasise that the line of study of the content be aligned to the purpose / outcome, which may be in the form of comparison of theories (pūrvapakṣa-nirīkṣhaṇa mode), refutation of objections (vāda mode) and justification of established theories, applications / models / conclusions derived for real world (prayojaka mode), upgradation or recalibration of existing theories (Bhāṣya mode), framing a parametric assessment process / method (parīkṣā mode) to help validation of study, to provide a sectional comprehension of a theory in specific contextual reference (prakaraṇa mode) etc

This framework provides the perspective with which study may be undertaken in derivation / exposition of theories. It fixes the contour, the scope of the study, the participants of the study who are qualified and aligned to the process and result of the study and steers the study toward the envisaged goal, which may be establishment / verification and validation / upgradation / application / rebuttal and refutation / elucidation and commenting / assessment etc of the theory under study.

For instance, if a well-established theory is intended to be elaborated to a beginner of study, for the purposes of elucidation, then the whole approach, language and structure of the theory dissemination is kept lucid, illustrative and ontological in structure.

If a fresh theory is being established for scholarly review through a reputed double peer reviewed research journal, then the approach, language and structure of knowledge sharing takes on a different format that is highly technical, assuming that the reviewers are well qualified to comprehend such higher order content.

Fixing the constituents of the anubandha-catuṣṭaya as a requisite to theorisation acts as a first qualifier of śāstratva in a theory. It provides the contours for consistency in theorisation by not just stating the content and objectives of study but also clarifying the qualifications of who can engage with the study. The sambandha pointer reinforces the mode of engagement, how the viśaya should be packaged in delivery to enable the envisaged adhikārin to engage with it to meet the prayojana that the theory intends to serve. What should be the level of technicality, representation and language to be used in the dissemination of the theory is guided by this framework effectively.

While this might come across as an intuitive format that researchers would anyway use, even if not stated explicitly as a framework, having it as a template at the commencement of theorisation provides the required focus and the direction for the study to be steered cohesively keeping the pramātā, the prameya and the prayojana in focussed view. This has been hence acknowledged in the śāstra tradition as a qualifier template for śāstratva, put up right at the commencement of every śāstric exposition, be it a proposal, a hypothesis, a discussion, a dialectic, a validation, an application or a conclusion.

Śāstric parameters for theorisation

The purpose of creating systematic structures for theorisation is with a view to refine the content of research by subjecting it through these and arriving at pristine, faultless knowledge. Subjective intervention might creep in dampeners like bias, blind faith and selective pursuit is the fear that triggers the need to exercise objectivity in modern research, in one way insulating the research content from the observer, who is engaged in the process only as a facilitator of research and not as an active component of it. In Indian theory making process, refinement is emphasised for all participants of research, like the tools, the structures, the process etc. and the observer also. This ensures that subjectivity does not become a hindrance, rather allows for experiential testing and validation of theories through active involvement of the researcher with the research content.

Theorisation being a tool in pursuit of truth, the veracity of the tool is also considered to be absolutely essential in the Indian world. How robust is a theory then needs rigorous evaluation with regards to its:

- Ontological and conceptual optimisation
- Orthogonality and unambiguity in
 - Objective / purpose
 - Categorisation
 - Definition
 - Proof
 - Conclusion
- Precision and accuracy in essence
- Comprehensive coverage of knowledge domain, neither more, nor less
- Conciseness
- Being faultless / error free

There are several guidelines to theory development provided by researchers from varied disciplines of study. We find that conceptual and epistemological processes find a lot of emphasis in theory making. Clarity in definition of the concepts and rationale of the theory have been considered pivotal. Practical utility and impact of the theory are also emphasised for consideration. Some theorists have also identified interestingness as a prime factor to consider in theorisation while others have cautioned against it if it compromises the rigour of research.

Śāstratva also lays some parametric terms to theorisation which does not just focus on what a theory should do from a functional aspect but also delineates how a theory should be in its structural aspect. The questions that help as a checklist to check if a theory has rigour and robustness are:

- Is it optimal, succinctly defined?
- Is it unambiguous, non-vague & orthogonal?
- Is the abstraction light yet comprehensive?
- Is the coverage holistic & theory universally applicable?
- Is the theory non-trivial?
- Is the theory error free, accurate, precise

Let us delve into the significance of each of these parameters of śāstratva.

- Is it optimal, succinctly defined?

While a theory functions to explain-predict-control phenomena, the explanation should be focussed, not verbose and succinct. In śāstras, in fact, there is a practice of justifying the usage of every single term found in the main theory, usually elucidated through commentaries. This kind of justification of every term of the śāstric statements is known as ‘dala-sāarthakyam’ – clarifying the utility of each term in a śāstric statement. This is also a practice applied to

lakṣaṇas or definitions to ensure that there are no superfluous terms and no missing terms either in putting forth the theory to the audience. Every term is evaluated for its worth to be placed in the śāstric statement and only after it is found indispensable in bringing about conceptual completion is it given an appropriate place in the śāstric statement. However, brevity is not set against comprehensiveness and hence there is thorough evaluation of the śāstric statements from the view of conceptual coverage also.

- Is it unambiguous, non-vague & orthogonal?

Technical language or paribhāṣā is another feature that śāstras embody in their expositions. Śāstric terms are glossed adequately before they are used in theorisation. Terms of natural language, that may have ambiguity in common usage, are fixed in their meanings when used within the precincts of particular śāstras. When used in that specific śāstra, the term shall mean nothing else than what it is glossed with. For instance the term 'guṇa', is used in different śāstras like Āyurveda, Nyāya, Vyākaraṇa, Sāṅkhya etc and in each of these śāstras these terms carry technical senses, not by any means confused with its sense in another śāstra. So, guṇa in Nyāya would only mean a qualifying feature of a substance in the form of its quality, while in Sāṅkhya, it would only mean the tendency constituent of material entities, being one among sattva, rajas or tamas (enlightening, exciting or dulling in nature). Within the respective śāstras, guṇa is used singularly in these respective senses only, ensuring that any possibility of ambiguity in sense is fully ruled out.

Avoidance of conceptual ambiguity is also aimed at in śāstra and hence categorisation of concepts without complex overlaps into each other is another feature we come across in theorisation. Orthogonality of categorisation is considered as a best practice here and the abstraction of concepts and categories are undertaken with orthogonality in śāstric design. Since the very purpose of śāstras is to create knowledge models to sort the concepts even in chaotic and complex domains, such that an exclusive view of the domain in a sorted format becomes utilisable for real world application, we find that orthogonality is ingrained in śāstric categorisation and classification to avoid ambiguity. This does not mean that complex concepts are simplified or are not delineated in śāstras. Conditional clauses added into definitions handle such complexities. Relational clauses and conditional terms added to definitions help in dealing with such scenarios. For instance, in Nyāya śāstra, a conditional relation known as avacchedaka comes in handy to resolve complexities of such sort. Take the case of time – kālā in Nyāya. It is at once both a substance that acts as a substratum of all other entities in creation and also a relation that governs cause and effect. Its usage as either is context driven as well as clarified using the cognitive relation of avacchedaka – conditioned as – a substratum of xyz vis-à-vis a relation of precedence as in the case of, say, atoms precede molecules.

- Is the abstraction light yet comprehensive?

Abstraction of concepts in the research domain is the primary effort that theorists exert to develop their original theories. This is the arena where the systemic thinking skill of theorists is put to test. To be able to view the research domain from an overview perspective and from the particular perspective with attention to detail is the contribution that theorisation demands. To be a reductionist in abstraction to enable the theory to be light for comprehension of the

domain is preferred in theorisation. However, this should not compromise on the comprehensiveness of the theory in detailing the research domain. The challenge of the theorist is to abstract concepts and categories with orthogonality on the one hand and without cognitive heaviness on the other to enable simplicity and ease of utility in the theory. If the complexity of real world is transferred to the knowledge model, then the abstraction is not done well to serve the purpose of sorting the domain for practical application purposes. In order to achieve robustness of abstraction, it is required that the categorisation of the comprehensive domain is kept to the minimal number that beats non-orthogonality.

Śāstratva calls for this feature in theories, termed as *lāghava* – lightness. In fact, two types of lightness or *lāghava* are enlisted in the *śātras* – *svarūpa-laaghava*, which is lightness in form and *pratīti-lāghava*, which is cognitive lightness, that which is light on comprehensibility. These two types of lightness, without compromise on reasoning and comprehensiveness, are accounted as virtues of theorisation. *Nyāya*, for instance, uses as few as seven categories to abstract the universe as a domain.

- Is the coverage holistic & theory universally applicable?

When we consider a theoretical model of reality, what we look for is its internal consistency. In fact, a theoretical model is ultimately a representation only and cannot replace reality; what can be tested of the theoretical models is their internal consistency only. When a theory is able to explain and respond to any question, doubt or hypothetical scenario that the phenomena explained therein may be subjected to, over and above the direct elucidations provided in the theory, simply by enabling navigation of reasoning across the theoretical model, then we may be assured that the theory is holistic in its approach. This then allows for universal application of the theory, even dynamically across contexts, time and place, since it is empowered by internal consistency that allows navigation of reasoning to access even hypothetical scenarios that the phenomena may be subjected with.

When a theory is not consistent internally, it falls short of being holistic and universal in its approach to explain-predict-control phenomena as reasoning has gaps and hurdles in navigating the theoretical model to arrive at consistency driven answers.

- Is the theory non-trivial?

Coherence is an important merit for robust theorisation. The entire process of research and its theorisation demand this feature to gain the status of being a systematic construct representing truth. From reporting what is observable to arriving at non observable conclusions is a journey of reasoning and logical consistency. For instance, observing the falling of an apple to concluding that a non-observable entity named gravity governs it cannot be considered scientific or systematic just because a scientist liked to give a whimsical idea that there is some power in earth that pulls objects down instead of staying put in mid air or moving upwards. Mere observation and naming of a phenomena does not make a theory. What is needed is to discuss the nature of the phenomenon with a clear elucidation of the cause, effects and its characteristics and exceptions, as well as the cause of the exception if any. To prove these analyses, the theorist may supply the experiments conducted during the research phase and the

observations therefrom. A systematic exposition that is able to provide an explanation about the nature of phenomena as well as predictions and measures to control the phenomena based on reasoning and logical consistency is considered to be a good one in practice.

Again, the theorisation also requires to flow coherently in communicating the findings and the conclusions of the theorist. A step by step exposition, one that followed as expressed leads the practitioner / end user to the conclusions arrived by the theorist ranks higher in its recognition as a good theory.

- Is the theory error free, accurate, precise

This parameter is a much desired one pertaining to theorisation effort to enable the function of prediction and control. The wider the application of this parameter contextually, spatially and temporally, the more robust the theory.

Mainstream research emphasis on accuracy and precision is about arriving at a universally consistent theory that explains reality to the closest measure. While this feature is strived through quantitative research tools and methodologies in sciences and social sciences, humanities in mainstream research still grapples with representation of its theories and holistic and universal. On the Indian side, śāstras are better equipped to provide frameworks to represent theories in this domain particularly owing to its profound research in metaphysics and cognitive categorisation on the one hand and the śāstras being modelled on theory based reasoning approach.

Yoga, for instance, manualises workings of the citta (mind-intellect-ego complex) to such minute parametric details basing its first principles in the Sāṅkhya worldview and to practice based experience that one can check for oneself in experience the state of one's citta and work on it as guided by the system of Yoga. And this is not just subjective experience. The mapping of the citta to different states by definition in the Yoga system is experientially validated by all those who approach the system, with or without faith in its efficacy. Yoga is practically a technology that works on any citta machine of humans. Similar precise theories are seen evolved in Nāṭyaśāstra, Tantra, Āyurveda (based on tridoṣas), Prāṇavidyā, Nādaśāstra etc. that consist of involved practice which may be evaluated from time to time for progress against the parameters provided in the respective śāstras.

What about the scope of error in such śāstras where mathematical quantification does not lend its services for precision would be a natural next query. The discussion of cognition always includes the discussion of scope of error in śāstras, with regards to all the participants of cognition, namely, the cogniser, means of cognition, object of cognition and the cognition itself.

Scope of error respective to each knowledge participant is taken into account for refinement, including the observer –

Prameya errors	Pramāṇa errors	Pramātā errors	Pramā errors
Physically: Distance, lighting, size, hidden etc Inferentially: Elusive conclusion, logical uncertainty etc Verbally: Mistimed, misrepresented, illegible, intentionally erroneous etc	Physically: Limitation including faulty sense organ etc Inferentially: Errors like circularity, contradiction etc Verbally: Faulty interpretation, wrong data set, inadequate vocabulary etc	Lack of attention / interest (owing to fear, distress, distraction etc), bias, language / context / mental barrier etc,	Doubt, illusion, memory lapse, fallacious cognition

Theories are evaluated for their validity based on their clearance from the error scrutiny.

With all its components, the śāstric method of research is not designed merely limiting it to study of theories to which modern Sanskrit research is now relegated to, but is equipped to enable theory making, not limited to only Indian knowledge domains but modern ones too. In that sense śāstric method of theory making is neither ancient nor modern, it is perennially relevant!

References

[9781108415392 frontmatter.pdf](#)

[DvaitaVedanta](#)

[\(1-9\) TANTRAYUKTI AN ANCIENT TECHNIQUE TO FORMULATE, CONCEPTUALIZE AND COMPREHEND A TREATISE.pdf](#)