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JOURNAL > SITE 0: CASTALIA, THE GAME OF ENDS AND MEANS | 2016

Castalian Games

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Precisely what it means for a work of fiction to be *speculative* remains a matter of some controversy in literary circles. I do not intend to settle the debate on these matters, but rather to present *The Glass Bead Game*—Hermann Hesse’s final and most acclaimed novel—as a paradigm of fiction’s *speculative* potential.

Hesse’s novel is many things. It is clearly modernist in its style, playing with the elements of a classical bildungsroman. It is rigorously hypothetical in its setting, extracting a handful of tendencies from its present, projecting them into minimalist future. It is deeply philosophical in its scope, explicitly referencing the canon of modern European philosophy, implicitly encoding its themes in institutions and characters, and symbolically crystallizing their tensions into a singular conceptual innovation, the Glass Bead Game—a universal language and emblem of intellectual synthesis.

However, there are equally things it is not. Its stylistic modernism does not collapse into *formalism*, either in the critical sense of eschewing connections to its context or the technical sense of prioritizing structure over substance. Its hypothetical setting belongs neither to science fiction nor to fantasy, scrupulously avoiding both *naturalistic reflections* and *fantastical narratives*. Its philosophical ambition does not translate into didacticism, refusing reduction to either historical prediction or allegorical moralism. The life of Knecht in Castalia is a peculiarly austere hypothesis. Its carefully delimited deviations from the actual serve to evoke and embody ideas drawn from philosophy rather than science or mythology, but what the story extrapolates from them is less a singular thesis cloaked in narrative than an intricately crafted opportunity for further thought. The *hypothetical austerity* of Castalia forms the basis of the *speculative richness* of the Game.



Hermann Hesse enjoying naked mountaineering in Amden, photographed by his first wife Maria in summer 1910. (Image: German Institute of Literature in Marbach)

I. Castalia

Hesse presents Castalia as the natural evolution of the ideal underlying the modern university—the *universitas litterarum*—encapsulating the humanist search for knowledge and self-understanding, by uniting teaching, research, liberal arts, and exact sciences in the same institution. In establishing the Game as the symbol of Castalian culture, he presents it as the embodiment of this ideal:

The same eternal idea, which for us has been embodied in the Glass Bead Game, has underlain every movement toward the goal of a universitas litterarum, every Platonic academy, every league of an intellectual elite, every rapprochement between the exact and the more liberal disciplines, every effort toward reconciliation between science and art or science and religion.¹

However, the Game also symbolizes the form that this reconciliation takes within Castalian culture. Castalians study scripture and theology, music and poetry, and can appreciate and even recreate their subtle nuances, but they are neither believers nor artists, refusing either to practice or to create.² The Game's combination of high ritual and subtle creativity enables it to subsume the role of both religion *and* art within Castalian society. This subsumption is not merely a shift in the value placed in certain activities—it corresponds to a change in the understanding of value *as such*.

It is easy to dismiss the Castalian attitude to religion as a mere consequence of its explicit fidelity to the Enlightenment, but the Castalian attitude to art indicates an implicit fidelity to an entirely different historical moment—the End of History, the teleological plateau in the evolution of our collective self-consciousness articulated by Hegel across his various philosophical works.³ Hegel is the philosopher most often invoked in the course of the novel.⁴ He holds not only that the world is in truth Absolute Spirit—the unity of Absolute Idea (God) and its self-externalization (Nature)—and that world history is the process through which Spirit (as Culture) realizes itself (as Freedom) by achieving progressively greater self-consciousness, but that self-consciousness of this very truth is progressively manifest in art, religion, and ultimately philosophy.⁵ Hegel does not see the end of art or religion as the point at which they cannot be pursued any further and thus must be abandoned, but as the point at which their role as privileged forms of cultural self-consciousness has been subsumed by philosophy. Hegel's own philosophy marks the End of History by realizing this subsumption—constituting the foundation for all future progress in spiritual self-consciousness.

Hesse makes it quite clear that, for all its conceptual subtlety, the Glass Bead Game is not philosophy:

*Philosophizing should be done only with legitimate tools, those of philosophy. Our Game is neither philosophy nor religion; it is a discipline of its own, in character most akin to art. It is an art sui generis [...] The philosopher Kant [...] once said that theological philosophizing was “a magic lantern of chimeras.” We should not make our Glass Bead Game into that.*⁶

This is sufficient to discourage us from seeing the Game as the symbol of Hegelian philosophy. Nevertheless, the manner in which Castalia realizes the ideal of comprehensive humanistic inquiry exemplifies Hegel's account of the historical trend towards increasing collective self-consciousness through the evolution of social institutions. The prohibition on artistic creation reflects the notion that art has nothing more to tell us about ourselves, restricting the role of artistic institutions to preserving

the memory of lessons already learned. The ascension of the Game reflects the notion that the true value of art (Beauty) lies in enabling self-consciousness—by expressing the Idea of Freedom in various forms (e.g., in the emotional range of song or the ethical conflicts of Greek tragedy)—insofar as the Game aims at this value more directly, by exploring the freedom of thought itself (e.g., exposing mathematical analogies between disparate themes or resolving tensions between conflicting concepts).⁷

For Hegelian and Castalian alike, the essence of our freedom is the capacity for rational thought (Reason), and it is therefore unsurprising that each seeks the highest consciousness of freedom in the pure exercise of this capacity—either *contemplating* the Absolute or *playing* the Game. Still, there are deeper connections between their conceptions of freedom. There is a long tradition in German philosophy that aims to overcome the perceived opposition between freedom and duty. This tradition has two interlocking components. The first, initially developed by Kant, is the idea that individual freedom consists not in the availability of options for action, but in the capacity for *rational self-determination*. This means the capacity to respond to reasons for action (e.g., moral duty) constrained by neither external authority (e.g., arbitrary political power) nor internal desire (e.g., arbitrary libidinal impulse). The second, skillfully elaborated by Hegel, is the idea that this freedom can nevertheless be realized through social institutions. This means that socially imposed constraints on some forms of action (e.g., taxes on personal spending) can simultaneously enable others (e.g., investment in shared services), and that the net result can be an overall increase in individual freedom. Together, these explain the exercise of legitimate authority as bound by a corresponding responsibility to fulfill some role within a social institution that realizes freedom. Hegelian themes are thus clearly present in the understanding of *value* embodied by Castalia (and its Game) and the understanding of *freedom* embodied by the Order (and its hierarchy), but these are largely enveloped within the novel's engagement with the concept of *history*. According to Knecht, Castalians have “no confidence in that so-called philosophy of history of which Hegel is the most brilliant and most dangerous representative.”⁸ Yet this official rejection belies a deeper affinity manifest in the Castalian attitude to history, articulated by Knecht's Benedictine interlocutor Father Jacobus:

“You mathematicians and Glass Bead Game Players,” he would say, “have distilled a kind of world history to suit your own tastes. It consists of nothing but the history of ideas and of art. Your history is bloodless and lacking in reality. [...] You treat world history as a mathematician does mathematics, in which nothing but laws and formulas exist, no reality, no good and evil, no time, no yesterday, no tomorrow, nothing but an eternal, shallow mathematical present.”⁹

Knecht’s life as a student in Castalia and member of the Order serves to justify this assessment. Knecht comes to appreciate both the historical and political conditions of Castalia’s existence *and* its systematic ignorance of these conditions. Castalians act as if their province is a *world-historical* achievement that cannot be undone—as if the history of societies mirrored the history of ideas, in which nothing is lost to the memory of scholars.

In becoming Magister Ludi, Knecht achieves a singular position in Castalian society, combining the highest authority and highest responsibility toward the symbol of its governing ideal: the Glass Bead Game. However, we should not assume that his eventual decision to abdicate his position is a straightforward rejection of this ideal. Knecht is in a better position to appreciate the value of Castalia and the Game than anyone, but he is also in a better position to appreciate their historical precariousness. He sees that the unique *nonutilitarian* value which makes the Game so precious is precisely what puts it in danger, and that treating it as the culmination of a teleological development incorporating science, art, and religion does nothing to assuage this danger.¹⁰

Knecht’s break with the Hegelian conception of history thus forces him to reevaluate the conceptions of freedom and value lodged within it, but the result is more of a reorientation than a rejection.¹¹ This is best indicated by the quotation with which Knecht ends his circular letter:

Times of terror and deepest misery may be in the offing. But if any happiness at all is to be extracted from that misery, it can be only a spiritual happiness, looking backward toward the conservation of the culture of earlier times, looking forward toward serene and stalwart defense of the things of the spirit in an age which otherwise might succumb wholly to material things.¹²

The life of the mind that the Game symbolizes retains its *unconditional* value (Beauty), but it must ever be practically subordinated to the *conditions* under which it can be realized (Right). This implies a new compact between Castalia’s two roles, in which its pedagogical responsibilities toward the world beyond must be prioritized over its aesthetic devotion to thought for its own sake.

II. The Game of Games

Perhaps the most significant feature of the above interpretation is that the symbolic role of the Glass Bead Game has little to do with its status *as a game*. Of course, much of the Game's symbolic power derives from the fact that it is described obliquely, through various suggestive analogies and allusions, including its very name, which refers to its mathematical origins in the manipulation of special abacuses, rather than anything to do with its modern practice.¹³ Despite many earnest attempts to devise rules by which the Game could be played in reality, none has come close to capturing the air of sublime mystery and intellectual subtlety that Hesse so deftly weaves about it.¹⁴ Nevertheless, there is more to the Game *qua* game than is required for the symbolic role already described, and more to the core themes of freedom and value that can be revealed by disentangling them from the concept of history and connecting them to the concept of game.

Hesse provides an overview of the origins of the Game in the historians' introduction to Knecht's biography, and describes its general character and how it is played at various points throughout the book. The following passage is perhaps the most representative:

Under the shifting hegemony of now this, now that science or art, the Game of games had developed into a kind of universal language through which the players could express values and set these in relation to one another. Throughout its history the Game was closely allied with music, and usually proceeded according to musical or mathematical rules. One theme, two themes, or three themes were stated, elaborated, varied, and underwent a development quite similar to that of the theme in a Bach fugue or a concerto movement. A Game, for example, might start from a given astronomical configuration, or from the actual theme of a Bach fugue, or from a sentence out of Leibniz or the Upanishads, and from this theme, depending on the intentions and talents of the player, it could either further explore and elaborate the initial motif or else enrich its expressiveness by allusions to kindred concepts.¹⁵

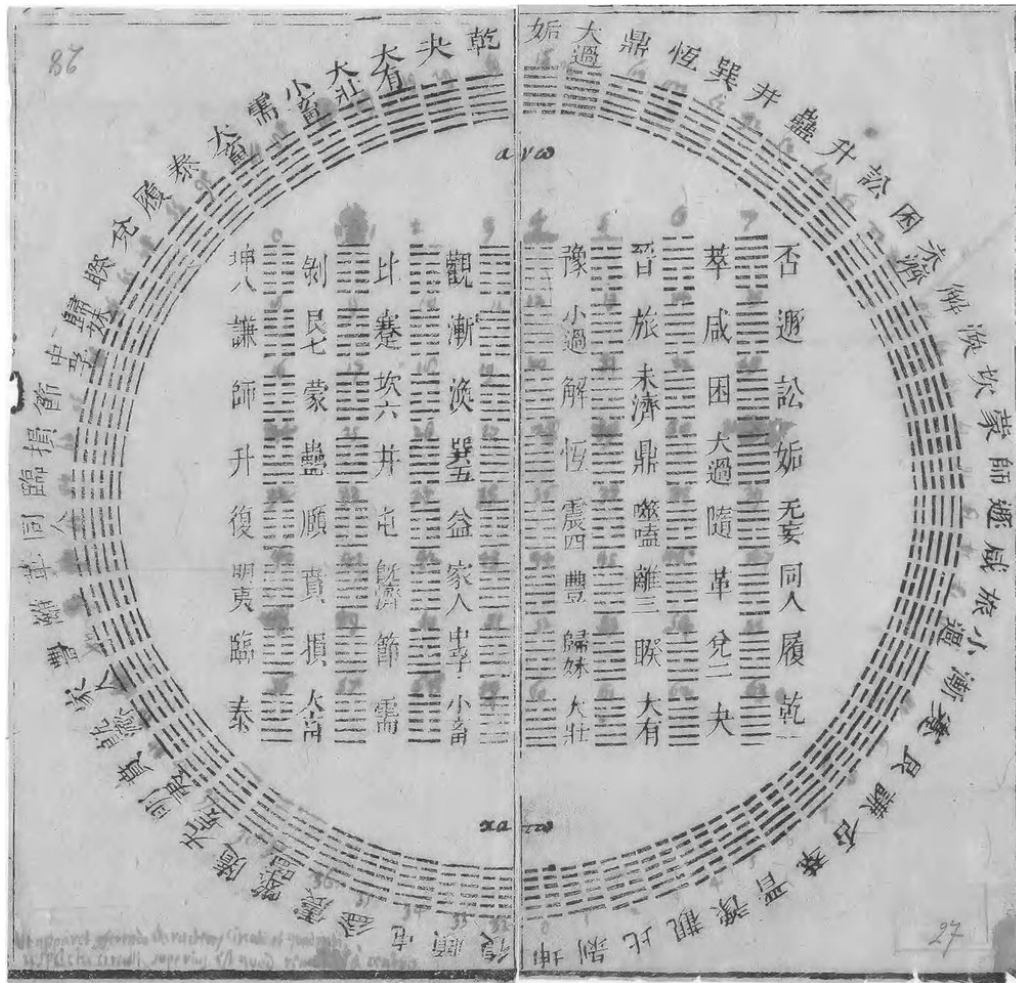


Diagram of i-ching hexagrams owned by Gottfried Wilhelm Leibniz

The heart of the Game is its *language*—an ideographic script comparable to Chinese—whose vast and scrupulously maintained lexicon enables it to communicate ideas from any discipline, and whose subtle yet mathematically precise syntax enables it to express correspondences between ideas across disciplinary boundaries.¹⁶ This aspires in some ways to the notion of a *characteristica universalis* proposed by Leibniz. However, while it certainly realizes the encyclopedic ambition of Leibniz’s proposal, it falls short of the corresponding logical ambition of a *calculus ratorator*—a universal framework in which every dispute between competing intellectual positions can be resolved by means of demonstration. By contrast, the Game develops the affinity between mathematics and music into a *lingua sacra*—a sacred language in which every harmony, symmetry, or counterpoint between disparate themes can be represented as a pure aesthetic abstraction.¹⁷ This opposition manifests an incipient tension between the *universitas litterarum* as a search for Truth, and the Game as a search for Beauty.

The selection of a given Game's themes and even something of their progression can be decided in advance, and Knecht spends much time in the novel composing and comparing such Games in private.¹⁸ However, the Game proper is meant to be played in public, by a number of players, whose contributions to the way the themes unfold will distinguish it from any other Game based on the same themes,¹⁹ and whose mutual cooperation can decisively determine the overall success of the Game.²⁰

A. Two Threads in the Theory of Games

The concept of *play* was a significant concern of German philosophy, beginning with Kant's account of the free play of the faculties in the experience of Beauty, and developed in Schiller's account of the play-instinct as the essential unity of man's active and passive dimensions, before passing into psychoanalysis in Freud's theory of drives and hermeneutics in Gadamer's theory of art. However, this concern did not really extend to the concept of *game*, which only began to be theorized on its own terms during the writing of *The Glass Bead Game* (begun in 1933) and the decades following its publication (1946), in distinct fields: *mathematics* and *sociology*.

Mathematicians have been interested in games since the beginning of probability theory, but it was only in the early twentieth century that something like a general framework for studying games and proving theorems regarding them began to emerge, achieving explicit form in Jon von Neumann and Oskar Morgenstern's *Theory of Games and Economic Behavior* (1944) and full generality with John Nash's "Non-Cooperative Games" (1951). The *game theory* that emerged from these innovations is essentially the study of *interactive decision spaces* constituted by rules that fix the players' possible actions (e.g., the permissible movements of chess pieces), the relations between them (e.g., taking an opponent's piece limits their possible actions), and the goal states or *payoffs* they are presumed to aim at (e.g., checkmate). Such study delineates *strategies* for achieving specific goals under certain conditions (e.g., ensuring checkmate given a particular endgame configuration), which choose plays, or paths through the decision space, in response to the actions of other players. The limit-case of this is a *winning strategy*, which guarantees the desired outcome no matter how the other players act. These strategies only exist in so called deterministic games (e.g., chess, checkers, etc.), and even then only some of these games are tractable enough to have been *solved* (e.g., tic-tac-toe).

The contrast between deterministic and nondeterministic games is only one aspect of the rich taxonomy that game theory has developed since its inception, incorporating distinctions between types of action (e.g., simultaneous/sequential, discrete/differential,

and finite/infinite), types of payoff (e.g., cooperative/competitive, zero-sum/open-sum), and types of information (e.g., perfect/imperfect and complete/incomplete). However, this taxonomy includes many activities that we would not usually describe as games (e.g., purchasing negotiations, the prisoners dilemma, nuclear war), and excludes many activities we would so describe (e.g., playing with dolls, word association, Dungeons and Dragons). Moreover, many nondeterministic games included in the taxonomy partially resist strategic analysis (e.g., baseball), insofar as the *actions* they involve cannot simply be reduced to *decisions* (i.e., one does not simply *decide* to hit a home run). Stochastic games such as backgammon are both nondeterministic and completely captured by game theory, insofar as the uncertainty they involve is strictly *circumscribed* by the rules (even if it is *realized* by rolling dice, shuffling cards, or computerized random number generation). By contrast, the uncertainty involved in baseball, competitive martial arts, or a scavenger hunt is only *mediated* by the rules, insofar as they incorporate elements of the world into the game (e.g., equipment, players, locales). This extrinsic uncertainty must then be folded back into game theory by incorporating independent causal and statistical analysis of these elements (e.g., hitting mechanics and sabermetrics).



Go players, published in *Miscellanea Berolinensia* 1710.

The foundational text in the sociology of games is Johan Huizinga's *Homo Ludens* (begun in 1933 and published in 1938).²¹ Huizinga does not really present a theory of games as a distinct form of activity, but rather aims to provide a theory of play as the root of all culture, expressed in everything from law and language to war and religion. He defines play as an activity that displays four connected features: *freedom* of action, *independence* from ordinary life, *delimitation* in space and time, and *governance* by fixed rules.²² Play thus tends to be parceled out into discrete activities, which become games or rituals as the limits/rules that separate them from ordinary life are formalized:

*The arena, the card-table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc., are all in form and function play-grounds, i.e. forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart.*²³

Although Huizinga agrees with Schiller that the play-instinct is an essential feature of humanity, he does not think it is unique to humans. He sees the same “irrational” drive at work in the behavior of kittens and chess masters.²⁴ The reason we are properly designated *homo ludens* (rather than *homo sapiens* or *homo faber*) is that this drive animates us to create and maintain these “temporary worlds within the ordinary world” to a degree found nowhere else in nature, resulting in the evolving networks of semi-autonomous social practices that constitute our cultures.

Huizinga’s failure to adequately define ‘game’ inspired Roger Caillois to provide the first comprehensive account of the concept in *Man, Play, and Games* (1958).²⁵ Caillois claims that Huizinga’s definition of play equally includes activities that aren’t games (e.g., religious ritual, legal debate, poetic composition) and excludes activities that are (i.e. noncompetitive games and gambling for profit).²⁶ However, he aims to revise rather than reject Huizinga’s “magic circle” approach.²⁷ He agrees with Huizinga that games are essentially *free* from obligation, and *separate* in space and time. He thinks that they are less independent than *unproductive*, contributing nothing new to ordinary life, but permitting redistribution of resources amongst players (as in gambling). He also thinks that while games necessarily involve players and things taking on roles (e.g., white/pawn, pitcher/base, astronaut/spaceship), this can take the form of *governance* by rules or *make-believe*. His distinctive innovation is to insist that the outcomes of games are essentially *uncertain*. These six common features give way to a comprehensive taxonomy of games, organized around four fundamental categories:

I am proposing a division into four main rubrics, depending on whether, in the games under consideration, the role of competition, chance, simulation, or vertigo is dominant. I call these agôn, alea, mimicry, and ilinx, respectively. All four indeed belong to the domain of play. One plays football, billiards, or chess (agôn); roulette or a lottery (alea); pirate, Nero, or Hamlet (mimicry); or one produces in oneself, by a rapid whirling or falling movement, a state of dizziness and disorder (ilinx).²⁸

Caillois thinks that some combinations of these categories are permissible, such as the perennial pairing of *agôn* with *alea* (e.g., backgammon, poker, etc.), but that others are incompatible, such as *agon* with *ilinx* and *alea* with *mimicry*. Furthermore, he proposes “a continuum between two opposite poles” along which the games in each category can be arrayed, representing the conflict between *paidia*—the “frolicsome and impulsive exuberance” associated with free improvisation and the unstructured play of animals and children—and *ludus*—the countervailing “tendency to bind [*paidia*] with arbitrary, imperative, and purposely tedious conventions” associated with the formalized games of

adults.²⁹ Caillois presents this disciplining of *paidia* by *ludus* as the historical process through which the categories have come into their own as specific forms of play (e.g., sport, gambling, theatre), and begotten corresponding forms of culture (e.g., educational competition, economic speculation, political ceremony); though *ilinx* is distinguished primarily by its resistance these developments.³⁰

B. The Reason in Games

Having introduced these traditions, we can now identify an important tension between their approaches to the concepts of uncertainty and rationality. It is best to see Caillois's emphasis on the *uncertainty* of outcomes as a development of Huizinga's emphasis on the *freedom* of players. If this freedom is to be more than the availability of options (e.g., the choice of tokens in Monopoly: boot, dog, etc.), then the game must suggest reasons for choosing between courses of action (e.g., defeating an opponent, scoring points, or playing elegantly); but if these reasons are to be something other than further restrictions imposed by the rules, then the courses of action they prescribe must be uncertain. This argument reveals the paradox of game theory—its tendency to minimize the uncertainty of the games it studies, effectively eliminating it in deterministic games. However, the above argument also reveals a commitment to something like rational self-determination implicit in adherence to “the spirit of the game” at odds with Huizinga's claim that play is “irrational” and Caillois's account of *paidia*. If we look more carefully at Caillois's account, he says that a game “consists of the need to find or continue at once a response which is free within the limits set by the rules.”³¹ This distinction between the *need* motivating the response and the *rules* limiting its form is obscured in the opposition between *paidia* and *ludus*, insofar as the latter ignores the difference between formalizing motivations *for* action and formalizing limitations *upon* action. The overall effect of this is that the absence of constraint characteristic of *paidia* becomes associated with the presence of spontaneity, wherein the *specific* motivations of play (e.g., the kitten's hunting practice, the child's sense-making of adult behavior, etc.) are subsumed by a *general* creative drive (i.e., the will to experiment, the artistic impulse, etc.). The opposition between *paidia* and *ludus* is thus framed as a conflict between irrationality, creativity, and freedom, on the one hand, and rationality, strategy, and law, on the other. It is tempting to acquiesce to this framing, if only to position game theory's paradoxical tendency to “break” games as the pyrrhic victory of *ludic rationality* over *paidaic irrationality*, but this would mean abandoning the rational motivation implicit in

“the spirit” of games that makes sense of their essential uncertainty. It would permit trivial uncertainty, consisting in the unpredictability of the player’s moves rather than their consequences.

We should rather see game theory as capturing only some of the motivations at work in games—those that can be precisely modeled by payoff functions and preference rankings—and thus as providing a truncated theory of rationality. Games with strictly formalized rules can incorporate surprisingly subtle systems of motivation, from goals that incorporate the uncertainties of the world (e.g., competitions to design better bridges) to *values* that shape the evolution of preferences (e.g., collaborative composition of beautiful narratives). Combined with the incredible ingenuity displayed by the master strategists of the ludic arts (e.g., chess masters, *Magic: The Gathering*™ champions, etc.), this is sufficient to demolish the idea that creativity is somehow opposed to rationality—it is not a singular wellspring of novelty opposed to the concrete diversity of purpose. We have seen that the Glass Bead Game symbolizes many things, but its hyperbolic synthesis of ludicism and aestheticism makes it the perfect emblem of this rapprochement of reason and creativity. It not only represents the conceptual relation between freedom and value contained in Reason—it presents a *speculative vector* along which to explore this relation in the domain of games and play. However, traversing this vector requires delving deeper into the dynamics of the game, thus passing from the reason in games to the games in reason...

Footnotes

1. Hermann Hesse. *The Glass Bead Game*. London: Picador Classics, 1987. 16. Print.
2. Ibid [GBG]. 27. The exception to this ban on creation are the fictional ‘lives’ that each student is supposed to compose during their years of free study.
3. I would identify the *Science of Logic* and *Lectures on the History of Philosophy*, the *Philosophy of Right* and *Lectures on the Philosophy of History*, and the *Lectures on Aesthetics* and *Lectures on the Philosophy of Religion* as covering the important intellectual, political, and cultural elements of this thesis, respectively.
4. GBG. 16, 40, 81, 91, 122, 227, 351-352, 445.
5. G.W.F. Hegel. *Aesthetics: Lectures on Fine Art*. Trans. T.M. Knox. Oxford: Oxford University Press, 1975. Part I: Introduction, 91-105. Print.
6. GBG. 141.

7. At one point, Knecht even comes close to describing the Game as consciousness of the Absolute (*GBG*. 121): “For the dark interior, the esoterics of the Game, points down into the One and All, into those depths where the eternal Atman eternally breathes in and out, sufficient unto itself.”
8. *GBG*. 351. It is significant to note that Hesse based the character of Father Jacobus on the cultural historian and noted critique of Hegel's philosophy of history, Jacob Burckhardt (see Ziolkowski).
9. *GBG*. 168.
10. *GBG*. 360-362.
11. This reflects Hesse's own reorientation in the course of writing the novel, from depicting a seeming utopia to criticizing the principles underlying it (see Ziolkowski).
12. *GBG*. 363. As Ziolkowski points out (59), this is in fact a direct quotation from Burckhardt's “The Revolutionary Age.”
13. *GBG*. 31-32.
14. These attempts are catalogued in a wiki entry. Web. 19 October 2015. <http://www.ludism.org/gbgwiki/HomePage>
15. *GBG*. 39-40.
16. *GBG*. 14-15, 36-37.
17. *GBG*. 118-121.
18. See *GBG*. 195-202.
19. *GBG*. 14-15.
20. This is demonstrated by the disastrous Game planned by Thomas van der Trave but led by Bertram, the previous Magister Ludi's shadow, which is deliberately ruined by the elite players as a snub to Bertram (*GBG*. 210-216).
21. Johan Huizinga. *Homo Ludens: A Study of the Play Element in Culture*. London: Routledge & Kegan Paul, 1949. Print.
22. *Ibid.* 8-11.
23. *Ibid.* 10.
24. *Ibid.* 4.
25. Roger Caillois. *Man, Play, and Games*. Trans. Meyer Barash. Champaign: University of Illinois Press, 2001. Print.
26. *Ibid.* 3-5.
27. *Ibid.* 5-10.
28. *Ibid.* 12.
29. Caillois. 13-14.
30. *Ibid.* 27-33, 36, 54.
31. *Ibid.* 8. Emphasis altered

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