Causal Chains and Textualization: Zola's *La Bête humaine*

C'est pourquoi, hors le feu, j'ai tenu à *la Bête humaine*: construite sur un jeu ouvert, elle compte parmi les œuvres qui rompent cet état cyclique et font éclater la clôture. Jeu de hasard et feu aléatoire, état nouveau de la systématique.

(That is why, short of putting my hand in the fire, I have clung to *La Bête humaine*: constructed on an open game, it is one of the works which break that cyclical state and burst the bonds of closure. Game of chance and aleatory fire: a new state of systematics.)

—MICHEL SERRES

Beginning, as it were, with a "gap," *La Bête humaine* (written 1888—90, published serially in 1889—90) illustrates Zola's "other side," with a most tightly linked causal system. Its protagonist, Jacques Lantier, is supposedly the second son of Gervaise and her good-for-nothing hatter, although, in *L'Assommoir*, there is no son between Claude and Etienne. After that initial inconsistency, the novel constructs a number of tightly woven and interconnected causal chains that tie each event to the next explicitly—across occasional implausibilities, the role of which we will explore—with all the rigor of a laboratory experiment. Zola's concept of the "experimental novel" involves, of course, a major sophism or two, of which he was doubtless aware at the time of publication of *Le Roman expérimental*, if only through the critique of his friend Céard. Zola writes, for example, in his theoretical essay, after quoting Claude Bernard on controlled experimentation:

Eh bien! en revenant au roman, nous voyons également que le romancier est fait d'un observateur et d'un expérimentateur. L'observateur chez lui donne les faits tels qu'il les a observés, pose le point de départ,
établit le terrain solide sur lequel vont marcher les personnages et se développer les phénomènes. Puis l’expérimentateur paraît et institue l’expérience, je veux dire fait mouvoir les personnages dans une histoire particulière, pour y montrer que la succession des faits y sera telle que l’exige le déterminisme des phénomènes mis à l’étude.4

(Well then, returning to the novel, we note that the novelist too is made up of an observer and an experimenter. The observer in him gives the facts as he has observed them, fixes the point of departure, and establishes the solid ground on which the characters will move and the phenomena develop. Then the experimenter appears and launches the experiment; I mean, he makes the characters move in a particular story, to demonstrate therein that the succession of facts will occur just as the determinism of the phenomena under study requires.)

And he adds, in reference to the experimental novelist: “He has set out from a position of doubt in order to reach absolute knowledge; he will not cease doubting until the mechanism of passion, taken apart and put back together by him, functions according to the laws established by nature.” (“Il est parti du doute pour arriver à la connaissance absolue; il ne cessera de douter que lorsque le mécanisme de la passion, démontée et remontée par lui, fonctionne selon les lois fixées par la nature.”)5

The obvious logical problems posed by these declarations and others like them are a trifle embarrassing. First, while experimental science has among its goals the defining of those constant relationships that we call “laws of nature,” and which allow us to predict and control events, a definition of “the laws established by nature” and of the “determinism” of phenomena is a precondition of the novelist’s “experiment,” not its conclusion, for the obvious conformity of novelistic phenomena to these laws is its aim. “Absolute knowledge” must therefore precede the absolute knowledge which is the writer’s demonstration: not only the existence but the knowledge of “causal laws” is a foregone conclusion. Second, these sentences express an abiding faith in the constancy of causal relationships. A remarkable number of unchangeables conjoin in these texts, from the “solid ground” on which the characters walk, the environment that will interact with their heredity (as if a natural environment would really “hold still” long enough for a replicable sociological experiment), to the “determinism” of the phenomena themselves, to the “mechanism” of passion, so that even the moving parts of the experiment (“marcher,” “se développer”) achieve a kind of stasis, like that of immutable scientific truth. Third, of course, if it
is the experimenter in the novelist who "makes the characters move," it is not the laws of nature that do so.

Critics have long questioned the ability of historical texts to represent the reality of history. Fredric Jameson has perhaps pushed the argument a step further; his formulation holds:

. . . that history is not a text, not a narrative, master or otherwise, but that, as an absent cause, it is inaccessible to us except in textual form, and that our approach to it and to the Real itself necessarily passes through its prior textualization, its narrativization in the political unconscious.\(^6\)

It would be hard to find a more succinct statement of the problem: phenomenon and text do not belong to the same species, as it were, so that a gap exists between any real event and the account thereof ("absent cause," and the neologisms in "-ization" indicating transformation); the words "text" and "narrative" evoke a grammatical linking of semantic elements, while their negation suggests the absence of any such clear linkage among real phenomena; knowledge is associated with "text" and not with the real ("inaccessible to us"), so that observation itself, as conceived by Zola in \textit{Le Roman expérimental}, may seem a doubtful enterprise. Jameson's formulation further implies that, whether textualization takes the form of a history book, a novel, or simply a mental construct, the apparent laws of nature are actually a reflection of the rules of grammar. Here we may join with Valéry in stating that no possible formal or technical distinction can be drawn between written history and written mimetic fiction, and in adding that the "admirable causality" of which some historians (and novelists) seek to persuade us depends essentially on the talents of the writer and on the reader's critical resistance.\(^7\)

\textit{La Bête humaine} is a laboratory of textualization. Zola's "observer" plays \textit{grosso modo} the role of our "narrator": his "experimenter," that of our "inferred author." Their interaction can tell us little about the "laws" that govern the physical and psychological world in which we live, but it can reveal with striking precision what happens to the idea of causality when it is expressed. The very quantity of tight causal chains (in which \(A\) causes \(B\), which causes \(C\), etc.) permits comparison of several kinds of causal logic and of causal problems, so that the concepts of "known" and "expressed" causality are put in doubt on rational grounds. Indeed, Zola's conclusion here seems to approach Jameson's.
The text raises questions about the role of an observer-explainer-narrator when the implausible, despite all, happens. It points to the structural and formal role causal chains assume in narrative, and to the dual nature they thus acquire as representatives of the “real” and as fictional functions, exemplifying a theatrical ambiguity akin to that of the real actor or real prop in a fictional play. The novel shows random, aleatory events intervening to influence the course of causation, so that reported causality loses its function as a predictor. Indeed prediction is at times easier here on the level of *narration* than on the level of the *histoire*: causation functions as a predictor for the text better than it does as a predictor for the events the text recounts.

Zola’s sketch-notes for the preparation of this novel suggest that construction of the causal chains posed serious difficulties for him. His first problem was to invent two interconnected murders. Then he expressed a desire to work into that fabric the notion of murder by heredity—a homicidal maniac whose genes would predispose him to kill. He wished to include a description of the judicial system at work, and a portrayal of life on the railroad (“l’administration du chemin de fer, le poème d’une grande ligne, avec le milieu de la compagnie”—“the railroad administration, the poetry of a main line, with the social atmosphere of the company”), all without distracting interest from the central notion, the hereditary killer. “Le besoin de tuer et de tuer une femme,” he notes. “Mais comme cela s’arrange mal avec le reste, comme cela est difficile à s’arranger!” (“The need to kill, and to kill a woman. But how poorly that jibes with the rest, how hard that is to jibe!”). These difficulties led perhaps to the emphasis on causality in the work, to the discovery of the complexities of causal systems, in which the same apparent cause can produce, in several instances, several different results. Zola’s approach to the problems led him as well to the construction of an inside-out detective story, in which we see the crimes from the standpoint of the perpetrators, only to discover at last the logical reasons why the detective, in possession of all the physical evidence, must nonetheless reconstruct the causal chains all wrong. Denizet’s erroneous reconstruction of the crimes provides the clearest definition in the work of the distinction between real and textualized causation.

When readers set out to trace a causal chain, they must begin with a state of affairs they select as a final effect. One may write that A causes B causes C causes D, but, since no logic leads ineluctably from A to D, one will have to begin with D and work backward to construct the chain.
Denizet, like us, faces this difficulty; as Nietzsche pointed out, in this sense the effect precedes the cause. The corollary holds that authors must work in the same way: to construct a causally coherent sequence, one must plan from effect to cause in antichronological order. Then, for mimetic value, since life seems to evolve from cause to effect without such preplanning, the narrator must "perceive" and relate the events in reverse (i.e., chronological) order. The ambiguity of "to relate" ("to narrate" and "to connect") was never more evident: events can only be related backward, so that they can subsequently be related forward.

Furthermore, in an uncontrolled, open system, it is usually reductive to speak of A as the cause of B. Observation of reality suggests a multitude of interrelated conditions, INUS or not, that allow for and produce B. Criminal justice traditionally proposes three conditions for willed human actions: means, motive, and opportunity. (This system is also reductive: what constitutes means for one person does not for another, does not for the same person at another time. And, since the three must coexist at the moment of the action, timing is a factor; while means and motive may or may not persist, opportunity is usually presumed to be momentary, although that is not always so.) If we assume these three conditions as cause, each condition may be the result of an action itself having three (or more) conditions, so that reasoning backward from "effect" to "cause" should produce, not a chain, but a branching tree, in whose foliage an observer would soon be lost. As narrator, his situation would be hopeless, for language is not suited to tracing simultaneous, sinuous interconnections, as twigs move to branches to trunk: there is perhaps no better demonstration of these limits of causal narration than Michel Butor's Desgrés. In addition to the distinction created by the fact that logical order is antichronological, textualization of cause and effect requires simplification. To construct a causal chain, rather than a causal "tree," one must eliminate all but the most important conditions of an event. The narrator of La Bête humaine performs such reductive judgments about what is important, which brings him at last, theoretically at least, into conflict with the author: how hard indeed all that is to "jibe"! To examine Zola's "deconstruction" of causal logic, we shall observe its workings in the following examples: the special case of the Misard chain; a typical linear chain (Flore); chains constructed in parallel, by character (Lantier, Séverine, Roubaud), and by primary conditions (love triangles); and finally the Denizet reconstruction.
1. *The Misard chain.* Phasie's inheritance is the initial stative event, and her decision to hide the money somewhere in the house or yard, rather than to share it with Misard, her sniveling, little second husband, sets the chain in motion. His attempt at extortion, slowly poisoning Phasie by secret means, turns the action back upon itself to form a remarkably “circular” or “reciprocal” chain between two secrets: old Phasie growing ever sicker, seeking the source of the poison in her diet, and old Misard, frantically searching every cranny of the house to find a thousand francs. But fear and greed are only the initial motive force: it soon becomes a classic test of wills, in which the obstinacy of one partner feeds the stubbornness of the other, until desire to “win” completely replaces the money as the system's dynamic. The pair is bonded in a life-and-death struggle fueled by a petty but almost superhuman determination.

The transitivity of the chain flows back and forth, from Phasie to Misard, from Misard to Phasie, in a closed causal system. None of this energy can escape directly to drive the central plots of the novel. What then is the function of this chain in the economy of the story? First, as a special case of causation, it points, in contrast to the more open, linear chains, to the existence of different kinds of causal relationships, thus designating causality as a theme of the novel. Second, as an example of pair bonding through exchange, it reflects by similarity other relationships based on exchange—the central Séverine-Lantier bonding, for example. Passion can feed upon passion as determination upon determination.

Third, without providing direct energy to other causal chains, the Misard system stands in tangential relationship to the major lines of narrative force. Living at la Croix-de-Maufras, the Misards are located right on the main-line railroad tracks between Paris and Le Havre, on which Misard works as a signalman, while Phasie's daughter Flore is a crossing guard. Indeed, as we are learning of the circular chain through Phasie's explanation to Jacques of her hideous marital situation, the narrator often interrupts her tale (pp. 49–53) with descriptions of Misard and Flore performing their duties just outside the window. The circularity of the two opposing obstinacies that define the ménage is juxtaposed to the linearity of the tracks and of the trains that thunder straight down them. Insofar as the trains themselves may be taken as symbolic for the causal forces, social and political, driving the anonymous masses (“flots de foule,” p. 52) of French society toward war (p. 297), the circular and the linear can be taken as models for the tangential
relationship of personal to social realities. At the end of her account of Misard's murderous cruelty, Phasie unites her conception of human bestiality with the marvelous invention of the steam-powered locomotive: "Oh, it's a fine invention, there's no denying. We're going fast, getting smarter. . . . But savage beasts are still savage beasts; even if they invent still fancier machines, there'll still be savage beasts on board" (p. 53; "Ah! c'est une belle invention, il n'y a pas à dire. On va vite, on est plus savant. . . . Mais les bêtes sauvages restent des bêtes sauvages, et on aura beau inventer des mécaniques meilleures encore, il y aura quand même des bêtes sauvages dessus"). Likewise, the little circular plot is tangential to all the novel's linear chains. Jacques Lantier comes there because Phasie is his aunt, who raised him. The circumstances of the rest of wills are essential conditions, as I shall show, in Flore's chain. Séverine inherits from Grandmorin a house virtually next door, in which she will be murdered. Indeed all the major events of the novel take place within sight of la Croix-de-Maufras.

Finally, the Misard chain stands in a structurally symbolic relationship to the rest of the novel. La Bête humaine is a story about steam locomotives. In these engines, the back-and-forth movement of the pistons is translated through the drive rods tangentially into the circular movement of the wheels, which again translate it into the rectilinear movement of the train. The reciprocal nature of the causal model represented by the Phasie-Misard relationship is not without resemblance to the reciprocating steam engine. Their alternating and mutually stimulating cruelties toward one another, having become a continuous power-seeking circularity, drives the marriage in a straight line to its murderous conclusion. The self-contained subplot thus functions by analogy to overdetermine the symbolism of the locomotive. And the tangentially linear chains involving Flore and Jacques work, so to speak, like drive rods. As the little circular chain acquires contrastive, symbolic, and overdetermining formal functions in the histoire, the "seriousness" of events is diluted: they appear less reality-referential and more self-referential, causation serving a logical purpose which the récit attempts to mask as mimetic. Textualized causation is diverging from "real" causal relationships.

Phasie's discovery of Misard's secret (the poison in the salt) cannot halt the destructive process; he finds a new means (the poison in Phasie's enema solution), and she dies, without revealing the whereabouts of the "treasure." He will die without having found it, and it will remain lost for all
time. Reciprocating engines wear out, their energy at last dissipated: Serres's "law" of entropy in Zola's fiction is herein validated.  

2. *Flore's chain.* Significantly, it is a cracked drive rod that brings Jacques Lantier to la Croix-de-Maufras. This mechanical failure in his "Lison" exemplifies the "chance occurrence": it is physically caused, but the chain of events that produce the tiny crack is too minute and too complex to follow. The timing and location of the breakdown were unpredictable, and it appears as a "random event," although one may suppose in fact that it was not. Such "chance" occurrences, frequent in the novel, are not a denial of physical causation, but rather an indication of human inability to observe, and hence to textualize. And, although la Croix-de-Maufras is easily accessible from Le Havre, where the breakdown occurs, Jacques's decision to spend the two-day enforced layoff at Phasie's also appears the result of a whim: there may be deep-seated reasons, but they are unknown.

What is known and clearly explained is the "fêlure héréditaire," the hereditary flaw or crack he brings with him (p. 61): an inherited predisposition to kill women when they arouse him sexually. The inferred author does not entrust this explanation to the narrator, but presents it himself in indirect discourse as an element of Jacques's thoughts. The engineer sees himself as paying, in his mental illness, for all the alcohol consumed by the "générations d'ivrognes dont il était le sang gâté" (the "generations of drunks whose tainted blood flowed in his veins"), as the product of a "slow poisoning" of the family blood—shades of what is happening to his aunt Phasie! Cumulative causation, whether the gradual accretion of metal fatigue in a drive rod or of poison in the blood, lacks the apparent temporal boundaries of an "event"; it is therefore unobservable as cause, although the effect may be well delimited, sudden, and disastrous, when the fêlure appears.

Like a drive rod himself, Jacques is both impellor and impelled, both victim (of heredity) and perpetrator (of crime), transmitting the past into the present like a superior link in a causal chain. It is as such that he reenters Flore's life. The events of the "Flore" sequence are clearly interconnected, from their first reunion near la Croix-de-Maufras, in the countryside at night. Jacques attempts to kiss her; she resists, then yields herself entirely. Jacques seizes her scissors, raises them to stab her, then flees, overcoming the homicidal impulse. But she, eyes closed in blissful submission, fails to see the murderous gesture: she is henceforth in love with Jacques. When
she later learns of his involvement with Séverine, she determines to kill the lovers. She drags a quarryman's loaded wagon onto the tracks in front of the oncoming train which Jacques is driving, and in which Séverine is a passenger, off for a weekend tryst with the engineer in Paris. In the ensuing bloody derailment, Séverine escapes unharmed; mighty Flore herself pulls Jacques alive from beneath the wreckage. Then she goes off and kills herself. The major motivational links are self-evident: love, jealousy, murder, remorse, suicide.

But seen in detail, the chain includes two other sorts of unpredictable causation: the intermittent series and the coincidence. Jacques is able to conquer his desire to kill, and his hereditary mania is not therefore a necessary cause. Indeed the temptation to kill does not always even surface in sexual encounters: he will be able to carry on an affair of some duration with Séverine. (He apparently is not a man who always kills on the first date.) His temptation and the strength of his resistance to it are variables, and while events may cause their variation, it is impossible to predict when, in conjunction, they will produce an attack. On at least one occasion, an exterior force intervenes to prevent his violence, and exterior interventions are also variable. So the series of his sexual aggressions is an intermittent one, and all an observer can say is that sometimes he is dangerous to his partners, and sometimes not. Sleeping with Jacques might be compared to Russian roulette, except that with him the variables are more complex and the data on which to calculate chances of survival less readily available. Causation is functioning, but it is not observable in such a series until after the fact.

In a coincidence, two or more causal chains intersect; events in each are observable, perhaps predictable, but the unforeseeable temporal conjunction of particular occurrences on the chains opens the door to astonishing, unusual happenings. The single most influential event in the novel is just such a coincidence: Jacques, wandering by the tracks in a daze after his aborted attack on Flore, catches a glimpse of Séverine and Roubaud murdering Grandmorin on an express train speeding past. Flore's chain involves several coincidences; two examples will suffice to illustrate their function.

First, to become crazed with jealousy, Flore must confirm her suspicions that Jacques and Séverine are conducting an adulterous affair, and indeed she catches them in an embrace. To bring about this crucial discovery, the inferred author creates the following chain of events: (a) Séverine
almost always takes Jacques’s train to Paris on Friday and spends the weekend with him there; (b) one Friday, during a blizzard, the train is brought to a halt by huge snow drifts; (c) the train gets stuck some three hundred meters from the Misaud home at la Croix-de-Maufras; (d) some of the passengers, including Séverine, take refuge there; (e) Séverine knows Phasie personally because of the Grandmorin property next door, and she is therefore ushered into Phasie’s sickroom to sit down, instead of waiting in the kitchen with the other passengers; (f) Jacques too comes in to greet his bedridden aunt while Séverine is there; (g) Phasie falls asleep before her visitors leave; (h) Jacques and Séverine seize this moment “alone” to exchange a kiss; (i) Flore happens to open the bedroom door at the right moment to observe the embrace.

Most of the events are plausible, including the stolen kiss—this love affair is characterized by audacity. But, even allowing for nineteenth-century railroad equipment, and presuming some difference in meteorological conditions over the past century, one could surely have travelled the Le Havre-Paris line every Friday for many years without becoming snowbound, and for several lifetimes without being trapped in the snow near a specific house. Since no topographical features are mentioned, like a steep incline or a ravine, to make enrolissement more likely at this spot, the statistical probabilities of an impassable snowstorm on Friday morning must be multiplied by the probability of blockage at a particular, unexceptional point on the line. Thus causation of each event is explicit and clear; each individual event is believable and possible; yet the conjunction of events is highly unlikely. Whence the reader’s problem: to suspend disbelief because causes are clear and possible, or to sense manipulation of events by the inferred author to achieve a future result, because of the statistical improbability. Ambiguities of this kind may well leave our belief intact (“this is a realistic story”) while making us aware of the inferred author (“this is not a true story”). Coincidence thus tells us that textualized causation is partly “real,” partly structural, emphasizing the distinction between linguistic construction and life.

Flore’s entry into the bedroom at just the right moment is similarly ambiguous—plausible because she is bustling about the house serving food and drink to the stranded passengers, implausible because of the narrowness of the critical time frame: the duration of a kiss. Just as she had her eyes closed at the right moment to avoid seeing Jacques poised to strike her, she
has them open just in time to learn the truth. Coincidence, even when the intersecting chains are themselves plausible, points to manipulation, to a level of narration, and thus to "textuality."

Another coincidence in the Flore sequence brings together three important chains, Flore's, Cabuche's, and the Misard "circle," all to create the dramatic train wreck. Cabuche's arrival with a wagonload of stone blocks is plausible: hauling stone is one of the quarryman's tasks. His arrival at Flore's crossing just before the passage of Jacques's train is the coincidence: nothing suggests that his trips are regular or that Flore expects him at that moment. Flore has the motive; Cabuche brings the means. But how can Flore detain the wagon for several minutes until the train arrives? How can she separate Cabuche from his horses, so that she can pull horses and wagon onto the tracks? Phasie has just expired! He can scarcely refuse Flore's invitation to stop in to pay his last respects to the deceased, leaving his rig unattended at the crossing. And where is the only outside force that could prevent the wreck, the signalman who could stop the train or halt Flore's action? Misard, freed by Phasie's death, is not at his post, but is wildly digging for treasure in the back yard! Thus the Misard "reciprocating-engine" chain vents its last energy, throwing Flore like a broken drive rod straight into the spokes of the onrushing express. The fact that the inferred author had attributed to Flore a workable plan to wreck the train by removing a rail—a plan she abandons only when Cabuche comes into view—just demonstrates that this coincidence was "unnecessary." The indexic author is at once suspect: does Cabuche arrive in order to facilitate connection of the Misard chain to Flore's, as she runs amok?

Finally, like intermittent series, coincidences put in doubt the value of causal knowledge for predicting. We may be aware of all the causal forces at work in the two approaching chains; without precise knowledge of when they will intersect, we cannot predict the outcome. As soon as Flore falls in love with Lantier, we may foresee that she will come to no good, but how and when we cannot imagine. Only after her suicide can we look back, following Nietzsche's dictum, and construct the chain that led, "inevitably," to her demise.

3. Parallel chains. From the time that Roubaud learns of his wife's adolescent sexual involvement with her guardian, Grandmorin, and brutally forces Séverine to be his accomplice in the wealthy old man's murder, the couple's lives run in close parallel. From the moment Jacques observes
the murder, although too fleetingly to be certain of the criminals' identities, his chain is tied to theirs, most tightly after Séverine seduces him as a way of preventing his casting suspicion on her at the hearings. Table 4.1 lists the principal causes and effects, vertically, in these three narrative lines, showing also the horizontal points of interconnection.

Table 4.1

<table>
<thead>
<tr>
<th>Lantier</th>
<th>Séverine</th>
<th>Roubaud</th>
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<tbody>
<tr>
<td>Hereditary illness.</td>
<td>Reveals to Roubaud</td>
<td>Leans of Séverine's</td>
</tr>
<tr>
<td>Broken drive rod.</td>
<td>her liaison with</td>
<td>past liaison.</td>
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<tr>
<td>Visit to Misards.</td>
<td>Grandmorin.</td>
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<tr>
<td>Observes murder.</td>
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<tr>
<td>Called to testify.</td>
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<tr>
<td>Seduced by Séverine.</td>
<td></td>
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<tr>
<td>Séverine's lover.</td>
<td></td>
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<tr>
<td>Plots Roubaud's murder.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kills Séverine.</td>
<td></td>
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<tr>
<td>Philomène's lover.</td>
<td></td>
<td>Arrested for complicity</td>
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<tr>
<td>Discovered with</td>
<td></td>
<td>with Cabuche in Séve-</td>
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<tr>
<td>Philomène by Pecqueux.</td>
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<td>rine's and Grand-</td>
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<tr>
<td>Killed in fight with</td>
<td></td>
<td>morin's murders.</td>
</tr>
<tr>
<td>Pecqueux.</td>
<td></td>
<td>Convicted.</td>
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These narrative lines represent true causal chains, in which nearly every effect is the cause in turn of a subsequent effect. If we are seeking a Zola who is “anti-Gide,” *anti-absurde*, it would seem that here we have found him. The unpredictable occurs, but it is always explainable, in Kantian fashion, after the fact. There is coincidence in Jacques's witnessing of Grandmorin's murder, and a quasi-coincidence in the fact that Jacques's hereditary "time bomb" chooses to explode precisely when the plot to kill
Roubaud has given him means and opportunity—and a skillfully pre-arranged alibi. One may argue that the very circumstances of the planned crime—waiting alone in complicity with Séverine, knife in hand, for the victim to walk into their bloody trap—were the trigger of Jacques’s latent violence. But this is not the first time they had plotted to waylay Roubaud. And if present circumstances have major causal force, then the causal role of the genetic impulse is somewhat diminished. Still, causes, if not timing, are generally assessable in retrospect. One could scarcely predict, for example, that Jacques would begin sleeping with Philomène, his fireman’s mistress, shortly after slaying Séverine; in hindsight, however, it is easy to accept the explicit notion that he needed to test himself, to see whether his crime had purged him of the hereditary curse: curiosity about his own intermittence becomes itself a cumulative causal force. That Cabuche should find Séverine’s body is well prepared by the narrator: adoring Séverine with almost canine fidelity, he is always “hanging about.” Roubaud’s arrival to find Cabuche with the corpse (their joint presence on the scene is one cause of their arrest) is an impeccable link in the causal chain: he is the intended victim, arriving, as prearranged, for his own murder. A primary effect of such carefully structured causation is the comparison it permits with Denizet’s version of these events as the magistrate reconstructs them.

Reduced to their simplest terms for later comparison with the Denizet explanation, the major causal chains link the states or conditions of the characters as shown in diagram 4.1. The notion of “love” (“+”) in the diagram receives its broadest meaning, ranging from the most ethereal and idealistic adoration, represented by Cabuche’s worship of Séverine (not causally related to anything in the novel except his own subsequent conviction for murder), to simple sexual relations (Lantier and Philomène), to brutal possessiveness (Roubaud and Séverine). The multiple meanings subsumed under the idea of “love” evoke another sort of parallelism indicative of the “laboratory” study of causality being carried out in the novel.

As the diagram shows, jealousy is the prime mover, the underlying dynamic of action in the text. The inferred author sets up no fewer than five love triangles, resolving the potential instability they represent each time in a different way. Nothing suggests more clearly that the novel is experimenting with the notion of causal laws. (1) Roubaud and Grandmorin love (have loved) Séverine. (2) Flore and Séverine love Lantier. (3) Lantier and Roubaud love (have loved) Séverine. (4) Pecqueux and Lantier love Philomène. (5) Lantier and Cabuche love Séverine. Instability is triggered by
Diagram 4.1 Capital letters are characters' initials ("Pha" = Phasie; "Phi" = Philomène), and other symbols designate the conditions: "+" = "loves," "d" = dead, "i" = mentally ill, "j" = jealous, "o" = obsessive gambler, "p" = power-seeking.

perception: one of the lovers becomes aware that he or she has a rival for the affections of the beloved. Triangle 1 illustrates what might be called the standard or traditional mechanism for resolving instability: the husband punishes both the lover and the beloved, as Roubaud beats Séverine and kills Grandmorin. If this is the "law" of the jealousy reaction, the other triangles demonstrate that it can often fail to work. In triangle 2, the "aggrieved" party strikes out at rival and beloved according to the "law," but the event fails through a series of doubtless caused, but apparently random, occurrences. Flore's clumsy choice of means, a train wreck, kills and maims unpredictably a number of unrelated persons, while leaving Jacques and Séverine fortuitously alive. Thereupon, in remorse, the "aggrieved" party kills herself. The mechanism of the "law" may thus be readily derailed by chance.

Triangle 3 illustrates a potential instability that is never triggered. One rival (Lantier) knows from the start that his love is married; he has obviously won her affections, and jealousy does not occur. The other rival
(Roubaud) undergoes perception, learns that Séverine and Lantier are lovers. But, having apparently lost all desire for his wife through participation in triangle 1 and having thereafter substituted gambling for sex as his principal obsession, Roubaud feels no jealousy. Once his bomb has gone off, so to speak, it cannot explode again. This triangle has every possibility for stability, and it is Séverine of course who destabilizes it by seeking her freedom to marry Jacques. When Roubaud refuses a divorce, needing her inheritance from Grandmorin to gamble, she draws Lantier into the murder plot. Thus we would have the "aggrieved" party (Roubaud) slain by the two others. But this solution to the triangle also goes awry, when Jacques's genetic fûture breaks at last. This interference of series changes the character of the situation, and this time it is the beloved who dies. Triangle 3, had the standard mechanism been set in motion, would have furnished a neat and balanced ending to the novel (clôture): Roubaud, discovering Séverine and Lantier together, kills them both and goes to the scaffold for his crimes. But the inferred author has other things in mind; Lantier's genetic flaw must play a role in Séverine's causal chain, and it must go unobserved, to prepare the Denizet explanation.

Triangle 4 brings us back to the basic mechanism: Pecqueux strikes out at his rival and kills him. But circumstances again influence the outcome: having chosen to fight Jacques on the platform of a moving locomotive, Pecqueux puts himself in jeopardy, and both fall to their deaths, leaving a driverless train speeding off, symbolically, with its passengers into the night. As for triangle 5, it engenders no violence, for Cabuche's love is both pure and unrequited. All three survive in this stable situation, although Séverine will die through participation in triangle 3, which seems to ignite Lantier's hereditary predisposition.

Of the eight possible mortal outcomes of triangles, the inferred author has used five, which can be summarized like this (A = aggrieved party, B = rival, C = beloved; capital letters indicate survivors): (1) AbC; (2) aBC; (3) ABc; (4) abC; (5) ABC. Of the three remaining possibilities—aBc, Abc, and abc—the first is difficult to arrange in context. The second and third would be quite plausible, but were not selected as outcomes for triangle 3, when the genetic flaw intervenes: Roubaud never has the chance or the desire to eliminate Jacques and Séverine. Besides, to arrange all twelve deaths necessitated by the eight possible solutions, writer and readers alike would have to expend a great deal of emotional energy on an exceptionally large cast of characters. The five examples suffice to show that, from parallel initial causes, very different effects may ensue, either as a result of poor
planning (Roubaud is better at arranging murder than is Flore) or of unpredictable influences, elements either unknowable (Pecqueux cannot foresee his death) or unknown (Séverine is unaware of Jacques's fêture). What this experiment "proves," then, is that, while we may be able to spot a motive force, such as raging jealousy, in an individual, or recognize an unstable situation, such observations cannot serve as predictors of the outcome: causality involves an interplay of forces too hidden and too complex to be observed except (perhaps) after the fact. It also attests that genetically acquired homicidal mania, if there is such a thing, is only one type of hidden cause; without such hereditary baggage, Roubaud, Flore, and Pecqueux launch similar sex-related violence, of equal or greater brutality, on the simple basis of jealousy. By wrecking trains, Flore, and probably Pecqueux, intervene unpredictably in the causal chains of the lives of many otherwise unrelated passengers. A crack in a drive rod, if it goes undetected, can destroy the orderly succession of numerous lives. And such cracks are often impossible to detect until it is too late.

4. Denizet's explanation. But what about after the fact? Even if it is too late to avoid damage, can we not at least look back and construct causal chains in our minds and thus "make sense," if not of the future, at least of the past? The inclusion of Denizet's explanation in the novel provides an answer to these questions, no longer about causality as a real, if often unobservable, phenomenon, but about cause and effect as mental constructs.

Denizet's hypotheses form a kind of embedded narrative in the novel, a structure Todorov compares to the imbrication of subordinate clauses in longer sentences. As such, it forms a part of the histoire; it has a cause (society's desire to find and punish the guilty) and an effect (the convictions of Cabuche and Roubaud). It occupies a precise position on the timeline of the story and is thus contingent upon the causal forces then operative. It is an "event" created by the inferred author. But it is also histoire-referential, a recasting of many of the same events we find in the rest of the novel, but recombined and reconnected in new and different causal chains. The inferred author thus creates a narrative that is itself contingent upon events and places it in competition with the narrator's apparently gratuitous tale, so that each functions as a critique of the other.

Denizet's analysis (pp. 277–83) develops the following points. At the inconclusive investigation of Grandmorin's murder, Cabuche, the poor, unlettered quarryman, had come under suspicion for three reasons: he was an ex-convict; he had expressed hatred for Grandmorin (the aging lecher had mistreated a young girl thereafter befriended and cared for by
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Cabuche); and Roubaud, to avoid suspicion, had claimed to have seen a man of Cabuche's description boarding the murder train. When the investigation is renewed following the murder of Séverine, Denizet's convictions about Cabuche are confirmed, for he is found blood-spattered and holding the corpse in his arms. The murder wound was similar in both crimes (Séverine had preserved the knife and planned for Jacques to use it in slaying Roubaud). Cabuche is therefore a prime suspect in both cases. A search of his cabin after the first killing had turned up nothing, but a second search, after Séverine's death, produces Grandmorin's gold watch (Séverine and Roubaud had stolen it, along with some money, to mask the motive as theft; Cabuche had later pilfered a handkerchief of his adored Séverine, only to find the watch, by coincidence, wrapped up in it), the essential link of evidence tying Cabuche to both crimes.

The motive for the second crime gives Denizet pause, for Cabuche seems to have worshipped Séverine. This difficulty leads the magistrate to have Roubaud arrested. Denizet's theory holds that Roubaud coveted the legacy his wife was to receive from Grandmorin. A coward incapable of murder, Roubaud had paid Cabuche to do in the rich old man, thus speeding up the inheritance. Afterwards, since it was apparent to all that the Roubauds were on the outs, it was supposed that Séverine had refused to sell the house at la Croix-de-Maufras, as Roubaud wished, to stake his gambling. Whence the need for a second murder. Cabuche was hired again (a rape before the killing would surely satisfy the "adoration" of such a brute!) to do the deed.

Tortured by hours of questioning in Denizet's effort to prove the accuracy of this construction, Roubaud at last confesses to the truth: he had killed Grandmorin himself in a jealous rage. This confession, part of the causal chain of the investigation and not of the murder itself, could well destroy Denizet's theory of a prearranged plot. But the magistrate resists it as a ruse to weaken his case for premeditated murder. Aware that Roubaud had tolerated Jacques's affair with his wife, he prepares to describe to the court a Roubaud incapable of jealousy, a man who married for money, and who conspired with Cabuche to kill to get it. (The proof of the veracity of Roubaud's confession exists. Séverine's letter to Grandmorin, written at Roubaud's violent insistence to ensure that the old man would be on the train with them, was found among Grandmorin's papers after his death. But the person who found it, judging that it could compromise Grandmorin's reputation and thereby weaken the Emperor's government—all prominent supporters of the government must appear irreproachable, after all—de-
Diagram 4.2 Characters are designated by their initials; "+" = cohabiting with, "d" = dead, "g" = motivated by greed, "h" = motivated by hatred, "r" = rich, "s" = motivated by sexual desire.

stroyed it: a post-crime interference of series.) As for Séverine's true murderer, the alibi Jacques established, by slipping out of, and then back into, his hotel room through a window, arranged to cover Roubaud's killing, works just as well for Séverine's. Besides, from Denizet's position, it is unreasonable to suppose a man would kill his mistress, with whom he was on the best of terms.

Denizet's reconstruction, with which he wins his case, is represented in diagram 4.2. Comparison with diagram 4.1, the narrator's construction of events, will bring essential discrepancies to the surface.

Differences between Denizet's mental construct and "reality," as best we know it from the *récit*, have three primary sources: (1) Denizet's subjective predispositions, which are a major subset of (2) the causal dependency of the explanation itself, as an effect of the causes within its own time frame, and (3) the necessity to construct it logically, which is to say, counterchronologically.

As for his predispositions, Denizet is arrogant, materialistic, and bigoted. His arrogance is apparent in his own self-assessments, reported by the narrator: "As he used to say, he had a nose for truths" (p. 279; "Comme il le disait, il flairait des vérités"); "in one of those moments of inspiration when he believed in the genius of his perspicacity" (p. 280; "dans une de ces minutes d'inspiration où il croyait au génie de sa perspicacité"); "Never had he delved so deeply, he said, into human nature" (p. 283; "Jamais, disait-il, il n'était descendu si à fond dans la nature humaine"). His own materialism emerges from his imputation of greed to others. Indeed, as the diagram shows, greed has replaced jealousy in his causal system as the primary dynamic of the action. From his standpoint, acquiring wealth is a most
understandable motivation. His prejudice against the poor, who have failed to acquire material possessions, is evident in his judgment of Cabuche. Uneducated, untrained in self-expression, doubtless ill-clothed and unprepossessing, he is in difficulty with Denizet from the outset. It is reasonable, on these grounds, to read Denizet's explanation as a satire of the judicial system, run by the well-to-do for the well-to-do, at the expense of the poor. Certainly perception of cause and effect can be twisted by class values. But there is more.

Events occurring during the investigation influence its course. Roubaud's initial lies implicating Cabuche in the Grandmorin murder (cause: Roubaud's desire to save his own skin; effect: Cabuche's inculpation); Roubaud's later confession (cause: fatigue, discouragement; effect nullified by Denizet's predispositions); discovery of Grandmorin's watch in Cabuche's cabin (cause: Denizet's determination to convict Cabuche, whence the second search, and Cabuche's fetishistic thefts from Séverine; effect: Cabuche's conviction): all such events belong to causal chains exterior to the murders, yet they influence the explanation. Denizet's prejudices are a part of this subsequent influence, including one tendency we have not mentioned: the inclination to preserve a preestablished theory in the face of new evidence (such as Roubaud's confession), to read the evidence so that it fits the theory, rather than to change the hypothesis to accommodate the facts. Yet despite all the personal criticism we can address to the magistrate on the basis of the text, an epistemological problem remains: if the search for causes of previous events is contingent upon a causal chain inherent in its own time frame, it cannot uncover what it purports to seek, except by coincidence. This places the very principle of a posteriori causal explanations in doubt. Denizet cannot be blamed for that.

Finally, the antichronological logic required to construct explanations differs by nature from the chronology of causality and therefore fails to explain it. When Roubaud admits to having killed Grandmorin in a jealous rage, Denizet reasons backward: Roubaud was quite tolerant of Lantier's long affair with Séverine; therefore he is either not sexually possessive by nature or not sexually possessive of his wife. In either case, jealousy could not therefore be the motive for killing Grandmorin. If he married Séverine for her inheritance, however, it is possible to explain Grandmorin's murder (greed) and the absence of jealousy when Roubaud learns that Jacques is bedding his wife. Thus he establishes a causal system which explains two events, but which omits an intermediary cause present in reality: psychological change in Roubaud after the first murder. Unobservable causes—
causes which are not "events" but evolutions, slow accretions—can find no place in a logical structure built backward from event to event. Asked about the apparent discrepancy, Roubaud can only state the facts: "J'ai tué l'autre, je n'ai pas tué celui-ci" (p. 282); "I killed the other one, I didn't kill this one." In an explanation, however, it is not the facts that matter but their causal interrelation. For these facts, a posteriori, none can be found. As Roubaud will conclude at the trial, "what good was it to tell the truth, since it was the lie that was logical?" (p. 288; "à quoi bon dire la vérité, puisque c'était le mensonge qui était logique?").

Likewise, explanations lose their logical rigor if they reject an overdetermined hypothesis in favor of an implausible coincidence. Cabuche is a rough and boorish ex-convict, present at the site of the second murder and probably at the site of the first. It would be logically easier (and not only for Denizet) to believe that he killed Grandmorin and stole his watch than to believe that he took a handkerchief as a keepsake from his beloved and found, by chance, the watch inside. As for Jacques's intermittent urge to kill, if that is unobservable to all those who knew him well in the present, it is totally undiscoverable in hindsight. "Backward" reasoning connects only visible events and prefers the simplicity of broad, general causes to the complexity of interfering series (coincidence) and of irrational, unpredictable behavior. In these ways, causal analysis is foreign to the reality it pretends to explain. Here again, the problem lies not with Denizet or a particular judicial system, but in the realm of epistemology: logic can neither see nor reconstruct causation after the fact. In this instance, the primary error is a belief in inertia: once a condition exists, it will persist until an "event" intervenes to change it. If Cabuche was once a criminal, he still is; if Roubaud once failed to be jealous of Séverine, he never was. Yet the basic principle of causal logic, that states of being are the result of events that cause them, rests upon this belief in inertia.

The diagram of Denizet's explanation thus appears far simpler than the one we have constructed on the basis of the narrator's récit. The cast of characters is smaller. Lantier is erroneously omitted, for he is invisible to logic. With him go a number of "extraneous" characters: the Misards, Flore. (But are they extraneous? Without Phasie, Jacques would never have become involved in the chain of events at la Croix-de-Maufras. And if Flore had kept her eyes open, Jacques's mania might have become public knowledge in time to save Séverine.) And for the characters retained, Denizet makes far fewer vertical connections, since his logic sees only events and not
evolutions and coincidences. He prefers instead horizontal connections, indicative of conspiracy, thus pulling Cabuche into the action.

The narrator's tale, then, is critical of Denizet's, which the inferred author requires him to include in it. Denizet's explanation is "false." But if Denizet is in error partly for epistemological reasons, how can the narrator's tale be "true"? How can we believe anyone who explains in the past tense? In this work, the narrator is reduced to an objective observer, a simple "scribe." Causal connections are expressed by the characters themselves, for the most part, even if that requires understanding doubtless beyond their capacities (i.e., Jacques's comprehension of the genetic origins of his mania). Thus causation appears to the reader to come in the form of "visible" events—characters' thoughts, actions which we and the perpetrators alone perceive. The narrator lacks even the class identity his language patterns gave him in *L'Assommoir*, and the inferred author dominates throughout this novel. His dominance reveals an intent of narration, and it produces a text in which the "gaps" require no creativity or symbolic activity on the part of the reader.

Why read a work in which our own creative activity is thus reduced? The function of *La Bête humaine* appears essentially didactic. The inferred author instructs by example, and the lesson is the weakness of causal theory. In this inside-out detective story, where we "know" the causal chains from the point of view of the criminals and can thus make sport of the wildly erroneous explanation of the "detective," the implausibilities serve less to liberate us from the inferred author than to accomplish his ends: making life difficult for Denizet. Ripoll points out, on the basis of Zola's preparatory notes, that the author was intentionally breaking the structural code of the detective story; Serres notes that the intervention of random occurrences produces a new state of systematics. For the "system" persists: everything in *La Bête humaine* has a clearly inferable cause. The questions are: In an open and uncontrolled system, can causation be observed? Can it serve as a useful predictor? Can it be textualized, reconstructed linguistically after the fact? The answers are all essentially negative.

Were the deaths of specific passengers on the train wrecked by Flore in any useful sense "determined"? No one—not even Flore—could have predicted them. And Zola leaves the reader in a similar situation at the close of the novel: who, if anyone, will die on the driverless train? The causes are all in place, but the precise results remain unpredictable. Séverine could not foresee her own death as she made love with Jacques while waiting to kill
Roubaud, nor could Jacques himself predict her murder, as he slipped out of his hotel and made his way to the lonely house by the tracks. But there are surely few readers who fail to predict it. For readers ask questions not only about fictional events, but also about the narration. Why create a homicidal maniac, unless he is going to kill? Why create such a beautiful, trusting, and evil character as Séverine, if she is not to be a victim? Why establish means, opportunity, and alibi for Jacques, unless he is to kill now?

The ability to ask such metacausal questions puts readers in contact with the narration. It is not gaps or weaknesses in the causal chain that send us there this time, however, in search of explanations. In the excitement of this adventure, where the past seems self-explanatory, we are interested rather in foresight. If we can often be, as readers, more prescient than the characters of this narrative, it is precisely because we have recourse to a level of narration, with its novelistic conventions, which is unavailable to the characters, visibly unaware of their fictional status. Our privileged knowledge, our “reason for inference,” is that nothing is included in traditional mimetic fiction which does not, sooner or later, have a bearing on events. A second impulsion for readers to look to the intent of narration is a gap—not a break in the causal chain, but a crack in the logic. The logical abyss that separates the two competing narratives of the crimes, the narrator’s and Denizet’s, points to a more general intent of narration, which we have just observed. Why present two competing récits of the same histoire? This time, our reason for inference resides in the differences between the two récits, the inferred causes of those differences, and the privileging of the narrator’s tale. Even behind the intricate, densely woven histoire of La Bête humaine, a level of narration is manifest, defining the distinction between “text” and “reality.”
Notes

9. Ripoll, p. 825. The awkward construction of *s'arranger* strikes me as an unconscious reiteration by Zola of the illogicalities of *Le Roman expérimental*: is it the events or the author that does the "jibing"? (Ripoll's transcription is accurate, as I verified on microfilm of the notes at the Bibliothèque Nationale, Nouvelles Acquisitions Françaises, ms. 10274, folio 353.)
14. Seymour Chatman might well call this a "narrator-absent" novel; see his *Story and Discourse* (Ithaca: Cornell University Press, 1978), p. 33. My position is that a narrator is always present, simply because her or his characteristics constitute an option of the text. "Neutrality" and "transparency" are narratorial characteristics; to select them, the text had to reject a "southern accent," "judgmental tendencies," etc.
17. Serres, p. 23.