

Expect the Expected: Aesthetics of Planting and Payoff

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Narrative, Volume 28, Number 2, May 2020, pp. 174-199 (Article)

Published by The Ohio State University Press DOI: https://doi.org/10.1353/nar.2020.0009



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Expect the Expected: Aesthetics of Planting and Payoff

ABSTRACT: Planting and payoff is a pervasive narrative device, but researchers have only begun to address the basis of its aesthetic appeal. The device excites a variety of cognitive effects that help explain its power as a storytelling technique. Empirical research in cognitive psychology—including studies of expectation, music, insight, humor, expertise, aesthetics, and other areas—help us understand the cognitive mechanics of the planting-and-payoff device and the pleasures that attend it. Psychology research also helps us address some perplexing questions in narratology, such as why people feel suspense when they already know a story's outcome. Recruiting the human tendency to prepare mentally for future events, storytellers enlist planting and payoff to choreograph expectations and enhance an artwork's aesthetic value.

KEYWORDS: planting and payoff, aesthetics, pleasure of narrative, expectation, prolepsis, music psychology, cognitive science

WHEN DIE HARD (1988) SHOWS US that John McClane has taped a pistol to his back, we do not know exactly why McClane has done that, but we anticipate a payoff pretty soon (Figure 1). Anton Chekhov said famously, "If in the first act you have hung a pistol on the wall, then in the following one it should be fired. Otherwise don't put it there" (Rayfield 203). If McClane didn't fire that pistol, then why show it to us?

In *Double Indemnity* (1944), Walter Neff says, "As I was walking down the street to the drugstore, suddenly it came over me that everything would go wrong." That's a plant. We already knew Walter was doomed, but the line reaffirms our foreknowl-

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Figure 1. A shot from Die Hard (1988) reveals that John McClane has taped a pistol to his back

edge—strengthens our prediction and our anxiety. When the camera in *Notorious* (1946) cranes down to a close-up of a key in Ingrid Bergman's hand, that's a plant too (Figure 2). The shot of the key foreshadows *something*—it's a crane shot, a close-up, and a key. "Wait a minute, I've got an idea" (*Mr. Smith Goes to Washington* [1939]); a shot of a hotel room sign that reads, "STOP. FORGET ANYTHING?" (*Touch of Evil* [1958]); three wishes (*The Thief of Bagdad* [1940]); a cough (*Mildred Pierce* [1945], *Brian's Song* [1971], *The End of the Affair* [1999]); an unusual talent (*Taxi Driver* [1976], *The Shining* [1980], *The Girl with the Dragon Tattoo* [2009]): these are all plants—shots, actions, signs, special skills, lines of dialogue, any story information that predicts or justifies a later plot event.

Let's define a *plant* as a preparatory narrational device that creates an expectation—however weak, misleading, or unconscious—of a future plot outcome or the memory of which somehow warrants the outcome in retrospect. The outcome—the *payoff*—typically resolves, in due course, one or more storylines left dangling by the plant, or else it draws on planted information to fulfill a narrative pattern.

These definitions encompass all of the uses that the writers of storytelling manuals would call "planting and payoff." They include *overt plants*, such as the gun taped to McClane's back, which generate an explicit expectation of a future outcome. They

also include *hidden plants* and *misleading plants*, which the narration may bring to light in retrospect. *Fight Club* (1999), for instance, pays off various hidden plants (e.g., plot elements that indicate an insane narrator) and misleading plants (e.g., conversations between the film's two main characters, who are played by different actors) when it finally reveals that the characters are in fact the same person.

With such a broad definition, however, we must distinguish the device



Figure 2. A shot of a key in Notorious (1946)

from narration in general. Planting and payoff is not just storytelling. Rather, it is a call-and-response device used pervasively, though not ubiquitously, in narratives. In order to exploit the device's many aesthetic benefits, storytellers must *add* it to their repertoire of narrational devices. Whereas some storytellers (such as Hitchcock and Dickens) use the device frequently, others (such as Bresson and Kafka) use it sparingly. Planting and payoff discretely tethers two plot events and inserts a sufficient stretch of time between them to develop a variety of aesthetic effects. Hence, not every core event in a narrative constitutes a plant or a payoff.

Let's examine two counterexamples. The scene in which Antoine talks with a psychologist toward the end of The 400 Blows (1959) contributes key story information, but it does not fasten discretely to any other single element earlier or later in the plot, so we would not identify it as either a payoff or a plant. European art cinema, generally, employs planting and payoff less pervasively than American commercial cinema, preferring more diffuse (rather than discrete) connections between events. By contrast, when Phil steps in front of a truck in Groundhog Day (1993) and gets run over, the narration tethers two discrete plot events (stepping in the street gets Phil hit by a truck); however, without any interval of screen time between them, the narration cannot develop the audience's aesthetic response, so we should not regard these paired events as planting and payoff either. Meir Sternberg emphasizes the importance of "retardatory material" on aesthetic response, noting that storytellers regularly exploit delay in a narrative in order to "manipulate the reader's expectations" (Expositional *Modes* 161). We will of course encounter liminal cases, as we inevitably do with narratological definitions, that challenge efforts to precisely delineate the device ("Do these particular events connect discretely enough?"; "Has the narration sufficiently delayed the payoff?"), but our effort to distinguish the planting-and-payoff device is not entirely hopeless if we stay fixed on our purpose of illuminating its aesthetic benefits. Narration, some say, always connects events causally, but storytellers only sometimes exploit the array of aesthetic responses characteristic of planting and payoff.

Our ways of thinking about the aesthetics of the planting-and-payoff device are incomplete. Narratological accounts of "prospection," "retrospection," and "recognition" help explain the device's rhetorical functions, and cognitive accounts help us understand the ways in which the device enables perceivers to process narrative information. But planting and payoff serve numerous aesthetic functions, which are fundamental to the aesthetic value of narrative in general. Narrative theorists (particularly Genette, Phelan, Rabinowitz, and Sternberg) and the authors of storytelling instruction manuals have already examined some of the device's aesthetic properties, pointing especially to its effect on narrative cohesion and credibility and on the perceiver's experience of curiosity, suspense, and surprise. However, we need a more detailed account of planting and payoff and the aesthetics of expectation in storytelling, one that explains the device's sometimes counterintuitive (even paradoxical) cognitive effects. Considering planting and payoff's pervasiveness as a storytelling technique, we should have a more complete analytical understanding of its psychological foundations, aesthetic effects, and artistic possibilities.

In an effort to account for the device's aesthetic value, I want to explain the *pleasures* of planting and payoff—pleasure defined broadly as *any intrinsically rewarding*

emotional experience (which may involve so-called "negative" emotions, such as stress). By recruiting the human tendency to prepare mentally for future events, storytellers employ the device to choreograph our expectations and enhance an artwork's aesthetic value.

Pleasure is always a tricky component of art study because, as humanities researchers, we have difficulty persuasively demonstrating how artworks create it; the pleasures of art seem so subjective. Cognitive psychology, however, has accumulated stacks of empirical research on the pleasures of art, including experiments that specifically study pleasures associated with manipulating expectations. Aesthetic judgments alone can seem arbitrary, but scientific research can help us understand why, in a given context, planting and payoff might lead to pleasure. The scientific method's reliance on random sampling, repeat testing, falsifiability, and predictive capability make it a reasonably dependable source of information about human perception, cognition, and emotion. We know science is limited and fallible, but the standards of evidence are high. At the very least, psychology research can offer feedback to the humanities by indicating whether a theory of aesthetic experience corresponds to the current scientific understanding of the human mind. Aesthetic researchers should try to ensure that the mind is liable to do the things that we say it is doing. By enlisting relevant empirical research in psychology, I hope to provide a persuasive account and a more precise understanding of the common pleasures that attend the planting-and-payoff device.

This essay identifies eight individual, although related, cognitive effects of planting and payoff, each of which contributes to aesthetic pleasure: (1) focused attention, (2) hypothesis formation, (3) release from tension, (4) interconnection, (5) fluent processing, (6) successful prediction, (7) incongruity resolution, and (8) artistic appreciation. Items one and two refer to cognitive effects of the plant, items three through seven refer to the payoff, and item eight is a metacognitive activity that results when we gain an appreciative understanding of a particularly skillful or inventive use of the device itself. Although I draw all of my examples from cinema, the overall argument applies to any narrative art form. Cinema, however, offers the most fertile illustrations of planting and payoff because filmmakers have at their disposal so many different means for manipulating expectations, including dialogue, settings, props, music, performance, cinematography, and editing, and we shall study examples of all of them.

Notes on Expectation

To better understand the planting-and-payoff device—to grasp its usefulness and prevalence—we must take a psychological approach. Planting and payoff has aesthetic power because of how it works on our minds, recruiting several different cognitive systems to achieve a variety of aesthetic effects. To understand the device, we need to understand something about the psychology of expectation.

According to a constructivist approach to cognition, we form expectations in an effort to complete a mental model of some aspect of the environment. Psychologists

call such models "schemas." For William Gaver and George Mandler, schemas are "abstract representations of environmental regularities" that help us "organise and interpret our world" (264–65). We have schemas for various components of the world, including stories, so that we can organize categories of information and process new information in relation to existing knowledge. We may, however, have too little information to develop a complete schema, so we generate expectations to fill gaps in our knowledge. Expectations are those parts of our schemas that "are not directly supported by input evidence" (265). The concept of schemas helps us understand the psychological basis of narrative expectancies. A narrative plant, we can say, activates an expectation by giving us incomplete input; the expectation comprises our effort to develop a more complete schema of the story, preparing us for future outcomes.

Where does the tendency to anticipate the future come from, and what is its function? Several psychologists have studied and speculated on these questions. Margulis argues that one of the basic functions of the brain is "to extract information from past and present events in order to prepare for and respond more effectively to future ones" (197). Hawkins and Blakeslee take the argument even further: "Prediction is not just one of the things your brain does, it's the primary thing . . . the cortex is an organ of prediction" (89). For Roese and Sherman, "Expectancies are tools for survival. By anticipating future fortune or misfortune . . . an organism is in a vastly better position subsequently to acquire and avoid successfully" (92). Studies of stereotyping offer evidence that expectancies help maximize the ratio of useful information to expended effort, improving the cost–benefit calculus for adaptive behavior (Sherman; Sherman, Lee, et al.). In this line of thinking, the tendency to generate expectations evolved for survival purposes so that we might avoid or prepare for adverse outcomes.

Cognitive musicologist David Huron argues that "the biological purpose of expectation is to prepare an organism for the future" by reinforcing "accurate prediction," promoting "event-readiness," and increasing "the likelihood of future positive outcomes" (4). Huron argues that biology has primed us to attend, and even overreact, to information that helps predict future events: "It is better to respond to a thousand false alarms than to miss a single genuinely dangerous situation" (6). If this line of research proves accurate, then storytellers employing the planting-and-payoff device are recruiting a cognitive system that is deep (the system is programmed by evolution), mandatory (we can't turn the system off), automatic (it is effortless and efficient), mostly unconscious (we typically don't know we are using it), and biologically reinforced (it offers affective rewards and punishments). We can't help but generate expectations, even in situations, like listening to music or watching movies, that pose no threat to our survival (Huron 358). Human minds are prediction machines, and artists exploit the mind's basic predictive function to create aesthetic effects.

By withholding information, the narrative arts have a variety of means to activate general expectation tendencies, leveraging our propensity to prepare for the future. Narratives intensify those tendencies because, as Peter Rabinowitz argues, audiences assume that events in narratives "will produce results" (133). My *Die Hard* example illustrates the process. At that point in the plot, we know that criminals have taken McClane's wife, Holly, as a hostage and that McClane plans to rescue her, but we do not yet know how he will do it with only two bullets left. Incomplete information

activates an expectation—an effort to complete the input and prepare for future outcomes. The shot of the taped gun (Figure 1) only partially satisfies our information needs: We now figure that McClane will surprise the two criminals, but we do not yet know how he will manage to grab the gun from his back and fire at them without their foreknowledge. Hence, the shot of the taped gun has simultaneously met one expectation (McClane will likely shoot each criminal, employing some sort of trick) and generated another (he will use the gun taped to his back somehow). The movie has carefully manipulated our tendency to form expectations by doling out plot information in intervals, priming us to attend to information that will help us predict future events and gain a more complete understanding of the story.

Cognitive psychology can help us resolve some puzzling questions about our experience of expectation in art. The most pertinent research comes from the field of music psychology, which, more directly than any other field of study, addresses the ways in which artworks manipulate expectations. Indeed, much of the empirical research on expectation in general comes from experiments with music. Entire books (perched atop an Everest of scientific experiments) tackle the relationship between expectation, music, and pleasure (see Aiello and Sloboda; Dowling and Harwood; Hallam et al.; Huron; and Meyer). Musicologist Leonard Meyer wrote the seminal work on music psychology in which he argued that emotion and meaning resulted from the composer's orchestration of our expectations—satisfying, delaying, or thwarting expected outcomes. Scores of psychologists have followed Meyer's lead with empirical studies of music and expectation. This research can help us understand the aesthetics of the planting-and-payoff device: Since music typically lacks conceptual content, music psychology can attune us to raw aesthetic responses pertinent to the other arts.

One perplexing question addressed within this research is "How can a familiar piece of music continue to surprise us?" (Dowling and Harwood). A similar question applies to familiar narratives: Why do we continue to hope for a favorable payoff to a narrative situation, and feel anxiety about an adverse payoff, if we already know the outcome? If, as Meyer notes, "Suspense is essentially a product of ignorance as to the future course of events" (27), then why do we feel suspense when we know those events for certain?

Aesthetic responses that seem baffling from an intuitive perspective become comprehensible from the perspective of cognitive psychology. Several music researchers have tackled this paradox directly, and their work illuminates the complex cognitive operations involved in the planting-and-payoff device (Justus and Bharucha; Huron; Tillmann et al.). We can resolve the paradox, researchers propose, when we recognize that a single event may enlist more than one area of knowledge, each of which might generate a different type of expectation. Theorists have posited at least two types: 1) *veridical* expectations, based on knowledge of the work we are currently perceiving or similar works, and 2) *schematic* expectations, based on a lifetime of experience within a culture. The two operate in parallel, but they might predict different outcomes: an event that surprises one type of expectation may be expected in the other.

Examining each type separately will help explain how planting and payoff can elicit that contradictory response.

Veridical memories tell us what to expect from an individual artwork based on our knowledge of it (knowledge gained from reading a book more than once, for instance). Veridical expectations tend to be conscious, effortful, and temporary. They haven't the power of schematic expectations because they do not come from firm, complete schemas.

Schematic memories constitute the internalized rules and hierarchies within a culture, automatically activated (often despite other learning) and difficult to suppress. Music psychologist Jamshed Bharucha argues, "Even when a given piece has been heard often enough to be familiar, it cannot completely override the generic, automatic expectations. Surprises in a new piece thus continue to have a surprising quality because they are heard as surprises relative to these irrepressible expectations" ("Tonality and Expectation" 216). Schematic and veridical expectations will converge for typical artworks, which we can process more easily because they comply with culturally reinforced knowledge. Schematic and veridical expectations may conflict, however, when a work violates cultural norms.

But shouldn't our veridical foreknowledge—our confirmed knowledge of this very artwork—override schematic expectations? If we know for certain a work's progression, don't we stop feeling surprised by schematically unexpected events? Some intriguing empirical evidence suggests that the answer is *no*: Veridical memories cannot completely overpower schematic expectations.

Justus and Bharucha tested the foregoing hypothesis by measuring reaction time after a musical priming task (speed being an established measure of expectancy). They gave listeners a musical sample and a simple binary task (to indicate whether a target chord was in tune). The researchers repeated the sample to generate familiarity (veridical memories) in listeners. When the sample included a schematically expected chord progression (C Major followed by D Major, a culturally typical progression in Western music), reaction times were fast because people respond more quickly to stimuli they expect (see also Benjamin and Bjork; Jacoby and Dallas; and Whittlesea and Williams). But when the composition included a schematically less probable chord progression in Western culture (C Major followed by E Major), reaction times slowed, even though listeners had been primed to expect the atypical transition. The authors concluded that a schematically unexpected event elicited surprise despite the fact that listeners' veridical memory prepared them for it, a conclusion later replicated using full compositions (Tillmann and Bigand). Researchers found that experts (composers) showed the same results as novices (Bharucha, "Tonality and Expectation" 221). Indeed, the experts doubted that they would show evidence of schematic tonal expectations and asserted their lack of preference for expected tonal events, but they too demonstrated slowed reaction times with schematically unexpected transitions. Experts seemed completely unaware of their schematic knowledge, illustrating the power of unconscious schematic expectations.

Based on the evidence from music psychology, we can speculate about expectations generated in other contexts, such as narratives. The evidence suggests, for instance, that we form expectations based on a lifetime of conditioning and that many expectations are unconscious. It also suggests that different types of knowledge may generate conflicting expectations. Our foreknowledge of an impending twist,

for instance, or another schematically unexpected event in a familiar narrative, may not completely erase our surprise at the moment of revelation, if the revelation violates storytelling norms within our culture. So the astonishing moment in *Magnolia* (1999), in which all of the principal characters sing the same song at the same time in different settings, may continue to astonish us, even upon repeat viewings, because our generic schematic expectations do not prepare us for the moment, more than two hours in, when the drama suddenly adopts a convention of the musical. Consequently, a narrative that we already know can still induce a trajectory of responses similar to those of our first encounter.

Sometimes those responses result from our immediate reaction to sensory stimuli. So Huron adds the category of dynamic expectations, which result from short-term patterns of experience, updated in real time (231). They too may surprise us, even when veridical expectations have prepared us for the outcome. Take, for example, the epilogue to Carrie (1976). After Carrie murders the other teenagers at her high school prom, kills her mother, and commits suicide by setting her own house on fire, the epilogue shows Carrie's surviving classmate, Sue, walking through the rubble of the burned-out home in order to lay a bouquet of flowers on Carrie's final resting spot. Melodic and saccharine sweet, the musical score predicts a scene of closure and resolution. Gauzy cinematography furthers the sense of relief from terror. Together these devices plant in viewers an expectation that the horrors may have ended. However, dynamic responses suddenly kick in when loud and dissonant music interrupts the calm scene, as Carrie's bloody hand reaches from the rubble to grasp the arm of a traumatized Sue. Immediate visual and sonic cues include a jump cut between two shots of Carrie grabbing Sue's arm and the abrupt interruption of melodic music in the middle of a phrase. The moment startles, even upon repeat viewing, because our dynamic response to the stimuli overrides our memory, despite the fact that our veridical knowledge of the scene tells us to expect the hand.1

Let's summarize some of the psychology research on expectancy. Expectations, according to many researchers, are biologically programmed responses to incomplete information, and they are automatic, mandatory, and often unconscious. They rely on schemas, which help prepare us for the future. Different types of knowledge may generate conflicting expectations, particularly when experiencing unconventional artworks and works we already know.

The planting-and-payoff device, as we shall see, leverages our innate propensity to anticipate the future in ways that spark pleasure.

Aesthetic Pleasures of Planting and Payoff

Armed with some basic knowledge of the psychology of expectation, we can now examine the aesthetics of the planting-and-payoff device. Aristotle began this examination in the *Poetics* when he insisted on the importance of non-arbitrary links between events. Stressing the "structural union of the parts" (1451a10–15), Aristotle argued that "cause and effect" heightens emotional response (1452a1–10).

Later narrative theorists have furthered our understanding of the ways in which storytellers manage causal unity, audience expectation, and aesthetic response. Umberto Eco analyzed the "inferential walks" taken by readers who are "induced to wonder what could happen at the next step of the story" (31). Peter Brooks noted the ways in which narratives cue readers to revise their expectations (23). Gérard Genette examined *prolepsis*—a literary device that gives the reader "advance notice" of upcoming events—and its effect on cohesion and suspense (73). James Phelan examined the aesthetic and ethical judgments that readers form when a fictional work resolves tensions and instabilities launched at a narrative's beginning (*Experiencing Fiction*). Perhaps the most complete aesthetic account of narrative expectation comes from Meir Sternberg's studies of "suspenseful prospection, curiosity-driven retrospection, and surprise-generated recognition," each of which arises, he says, from an effort to fill a "gapped future or past" ("If-Plots" 34).

These theorists have explored, in various ways, the role of expectation in narrative, but what of planting and payoff in particular? How well do we understand the aesthetics and cognitive basis of this device? The most relevant psychological account comes from Teresa Bridgeman, who offers a detailed cognitive explanation of Genette's prolepsis, examining factors that shape readers' story models. We may regard prolepsis as a type of plant in which the narration outright admits a later plot outcome (payoff), such as American Beauty's (1999) "In less than a year, I will be dead" or Double Indemnity's "I didn't get the money and I didn't get the woman." Bridgeman, however, attempts to account for the comprehension of prolepsis, not its aesthetic value. She offers a cognitive supplement to Genette's structuralist model in order to explain the "dynamic play between text, reader anticipation, and memory" (149). Luke Poot employs rhetorical theory to examine cliffhangers. Cliffhangers also work like plants, generating expectations of future story outcomes. Although he notes the impact of cliffhangers on reader anticipation, frustration, and suspense, Poot, like Bridgeman, concentrates on audience comprehension—how unresolved moments shape the reader's "understanding" of narrative (65). Rabinowitz has demonstrated how our presuppositions about narratives in general help storytellers understand the "expectations that are likely to be activated by a text," including the expectation that events in fictions "come in patterns of antecedent and consequent" (113, 133). For Rabinowitz, antecedent-and-consequent patterns (which perform functions similar to those of planting-and-payoff patterns) develop in audiences "a sense of anticipation" that storytellers can "foster and resolve, or frustrate" (133). Narratologists, however, have yet to study the multifarious, and often contradictory, aesthetic effects of planting and payoff, nor has anyone explained the underlying cognitive mechanisms by which creating, satisfying, and thwarting expectations generates pleasure.

The most dedicated explanations of planting and payoff's aesthetic power come not from narratology but from how-to-write-a-screenplay manuals. The manuals refer to the device, and its variations, by different names—"foreshadowing," "telegraphing," "pointing," "advertising," "dangling cause"—but in my research the earliest dedicated discussion of the device, as well as the earliest use of the term "plant" in a screenwriting manual, comes in Frances Marion's 1937 *How to Write and Sell Film Stories*. Marion explains how to employ plants to establish story causality: "If the most important

scene seems to be either coincidental or slightly irrelevant, work back through the story and weave or build in 'plants' that will lead logically to it" (89). According to Marion, and countless screenwriting instructors since, the plant justifies later events, provides exposition, and eliminates arbitrariness in a story.

In subsequent decades, screenwriting gurus have elaborated on planting and payoff's aesthetic functions, stressing its ability to create causal connections between events and unify different parts of a script (Field 269–83; Hauge 97). Howard and Mabley call it a "preparatory device that helps to weave the fabric of a screenplay together" (72). Cowgill focuses on its ability to strengthen "overall dramatic unity by creating specific connections between disparate sections of the plot" (229). Other authors treat the device as a tactic for working exposition into a script (Vale 74). Herman calls the device a "gimmick... introduced at the story's opening, developed in the second act, and then exploded by a sudden revelation, as a denouement" (58). Virtually all manuals urge screenwriters to exploit the device, justifying its use with appeals to story causality, credibility, unity, and the need for exposition. From these authors, we learn that employing the planting-and-payoff technique is not the same as creating a plot: Storytellers must *fabricate* the plants to exploit the device's aesthetic possibilities.

From narratology, we have an understanding of the structural mechanisms and rhetorical effects of narrative expectation, including some examination of aesthetic effects (particularly suspense, curiosity, and surprise). Storytelling instructors (such as screenwriting gurus) have intuited the device's crucial importance to narrative aesthetics and admonish their students to use planting and payoff to strengthen narrative exposition, causality, and unity. But we still cannot answer one key question: What makes planting and payoff so effective that practically every experienced storyteller employs the device? To answer that question, we must understand the device's cognitive mechanics and their contribution to the pleasures of narrative. We still lack a strong account of planting and payoff's power as an aesthetic device, as well as its pervasiveness as a storytelling technique.

The remainder of this essay illustrates eight individual (sometimes divergent) cognitive effects of planting and payoff that help us understand the device's complex contributions to the pleasures of individual narratives and of narrative in general. My catalogue of effects may not be exhaustive, but I hope it helps us understand the device's primary aesthetic functions and underlying cognitive basis.

We begin by discussing two cognitive effects specifically associated with a narrative plant: *focused attention* and *hypothesis formation*. Later we will examine effects of the payoff.

Focused Attention

Planting gives our minds something limited to attend to, reducing noise and distraction in the diegesis. By *focusing our attention* on delimited plot information, planting guides us to form heuristics for judging and interpreting events and distinguishing important from incidental plot information. Poot notes that delay in a narrative helps

to frame "a perspective on the story from which certain actions appear significant because they are unresolved" (56–57). Let's consider an example. Amadeus (1984) repeatedly stresses Salieri's envy of Mozart and anger toward God, focusing our attention on Salieri's unrealized plans and inspiring a search for evidence that he will sabotage his fellow composer. A plant ("I will ruin your incarnation") can "launch" a narrative, to use Phelan's terminology, by revealing "global instabilities and tensions" and cuing the audience to anticipate "the direction and purpose of the whole narrative" (Experiencing Fiction 18–19). We thereafter interpret Salieri's behavior through the lens of planted information, so that, even when Salieri appears to be helping Mozart, we understand his actions in light of what we already know.

Several psychologists have studied the effects of expectation on attention and interpretation. In their review of the experimental literature on expectancy, Roese and Sherman note that "expectancies influence the types of information perceivers seek in the environment. Often expectancies are essentially hypotheses about the world, and individuals seek information to test their validity" (100). Numerous scientific studies have tested the effects of expectation on attention, finding a marked tendency to seek information that confirms expectations (Klayman and Ha; Lord et al.; Skov and Sherman). Evidence that expectancies act as heuristics, driving judgments and interpretations, comes from research on persuasion (Petty and Wegener), stereotyping (Sherman, Macrae, and Bodenhausen), and other areas (Bruner; Darley and Gross; Higgins; Vallone et al.; Wilson et al.). This research suggests that expectations, such as those created by plants, focus our attention on information that will inform, test, or confirm our hypotheses. Faced with a noisy, changing, uncertain environment, we attend to information that will increase understanding and prepare us for future outcomes. Planting enhances the artwork's unity, focus, communicativeness, and clarity by directing our attention and shaping the meaning of the information we receive.

Hypothesis Formation

Planting provides us with cognitive challenges. An ambiguous artwork offers us the potential for mastery, as we investigate the work in the hope that it might reward our effort to understand it. Plants trigger that investigation by stimulating *hypothesis for-*



Figure 3. The murder of Miles Archer in *The Maltese Falcon* (1941). The framing withholds the identity of the killer.

mation. A plant is by definition an incomplete stimulus: It promises understanding but holds back information that would allow us to complete the input. It thereby activates a "tentative hypothesis," which is our attempt at completion (Sternberg, Expositional Modes 163). When The Maltese Falcon (1941) depicts the murder of Miles Archer but withholds the identity of the murderer (Figure 3), the narrative gap initiates curiosity hypotheses (Who killed Archer? Why?) and suspense hypotheses (Will Spade solve the case? Will

justice prevail?). The narration guards these secrets precisely to motivate the spectator's search for understanding.

A plant will inspire curiosity and suspense hypotheses provided that spectators retain hope in the prospect of story completion. The search for understanding relies on the assumption that understanding remains incomplete but still possible. Thomas Armstrong and Brian Detweiler-Bedell, in their review of empirical literature in aesthetic psychology, argue that "exhilarated pleasure" results from the prospect of "understanding particularly challenging stimuli when the potential to realize such understanding . . . is tangible but distant" (312). The possibility of achieving mastery over a challenging object, they argue, increases positive emotions, including pleasure and interest, as long as we do not feel so overwhelmed by the object that we give up the search for understanding it. Berlyne found that subjects' pleasure in objects grew, up to a point, with the objects' increasing novelty, complexity, ambiguity, or other properties that challenge a perceiver's ability to understand (Aesthetics). Paul Silvia has shown that subjects find objects interesting when they appraise the objects as challenging on the one hand and as comprehensible on the other. Silvia measured subjects' ability to cope with varying degrees of cognitive challenge posed by polygons, abstract poetry, and pictures. He measured subjects' interest in objects using both self-reports and behavior expression (i.e., time spent viewing). He found that interest grew with increasing complexity and novelty, provided the objects fell within the subjects' coping range. Scores of studies have found similar results, irrespective of the art form tested or the culture sampled (Berlyne, "Psychological Aesthetics"; Imamoglu; van Mulken et al.; Triandis). Such studies almost invariably graph the relationship between pleasure and cognitive challenge as an inverted-U (Figure 4). The graph indicates that subjects prefer challenging properties—novelty, complexity, incongruity, etc.—in increasing intensity until some maximal level, at which point subjects start to become overwhelmed and their pleasure diminishes and eventually turns to displeasure.

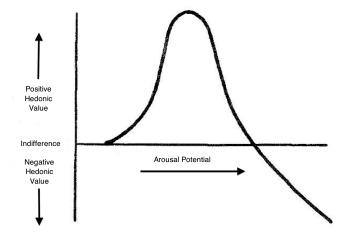


Figure 4. An inverted-U pattern, known as the Wundt curve, representing the relationship between an object's challenging properties ("arousal potential") and how pleasing the object is ("hedonic value"). See Berlyne, *Studies*.

A plant adds challenge to a narrative by preventing understanding at the same time that it offers the prospect of understanding, motivating an effort to complete an unfinished story. The narrative will likely retain our interest as long as the solution remains unfulfilled but within reach ("tangible but distant"). If a story is too challenging, then spectators will give up, unable or unwilling to sustain the search. If a story is not challenging enough, however, then spectators are liable to grow bored and tune out. Delight from aesthetic experience, art historian E. H. Gombrich writes, "lies somewhere between boredom and confusion. If monotony makes it difficult to attend, a surfeit of novelty will overload the system and cause us to give up" (9). The key to successful planting is finding the optimal level of cognitive challenge for the storyteller's intended audience.

Plants alone contribute aesthetic value to an artwork, and some storytellers, such as Franz Kafka and David Lynch, use plants with no payoffs. But, when combined with payoffs, plants inspire a wide range of emotionally rewarding cognitive effects: Among them are release from tension, interconnection, fluent processing, successful prediction, and incongruity resolution. Let's examine each in turn.

Release from Tension

A payoff releases the tension created by the plant. This tension-release structure satisfies the mind's quest for understanding, rest, and resolution. Payoffs feel like solving a problem, achieving clarity after confusion, such as the clarity we achieve at the conclusion of mystery films like *The Maltese Falcon*. Here, the payoff (learning the identity and motive of Archer's murderer) releases tension by clearing up the discrepancy between what the narration knows and what the audience does not (cf. Poot 57). When we reach the payoff, we feel we have wrapped up a mental task. A narrative film involves not just watching a story but also constructing it in our minds—connecting information, filling in gaps, and resolving ambiguities. A payoff completes the understanding circuit.

Delay before a payoff interrupts that task, heightening our stress. When the son in *The Celebration* (1998) publicly announces to the gathered family and friends that his father raped him and his now-deceased sister, our understanding of the story remains incomplete. The movie inserts various obstacles (the parents deny the accusation, the guests do not believe the son, the family kicks him out of the house) that postpone efforts to complete the narrative, causing a build-up of anxiety and worry. To finish the task and achieve stability and relief, we must learn what happened to him and his sister, who knew about it, and how the celebration will end. Ultimately, we see the family ostracize the father, relieving the stress of an incomplete story. Payoffs restore stability to a narrative and allow our emotions, heightened by delay, to achieve closure.²

The tension-release pattern has intrigued music researchers. Huron argues that delaying an expected outcome "creates a longer and more intense period of tension"

(314). Meyer says, "The greater the buildup of suspense, of tension, the greater the emotional release upon resolution" (28). Psychologists have studied the tension-release phenomenon in music perception. Bharucha, for instance, argues that a "dissonant musical event often has a dynamic quality, inducing an expectation of resolution to a following consonant event" ("Tonality and Expectation" 485). We find the same dynamic quality with planting and payoff. The interplay between instability and stability adds variety and emotional diversity to a narrative, at first arousing stress and then relieving it.

Interconnection

A release from tension relies on viewers' ability to connect the payoff to the plant. The process of *interconnecting* different parts of a narrative is perhaps the most prominent effect of the planting-and-payoff device, regularly discussed by screenwriting advisors because the connections make the events of a film feel more unified. Cowgill says that planting and payoff "weave connections through a film" (229), and Field says the device "becomes the 'glue' that holds everything together" (270). To understand how the device "holds everything together," we should analyze a series of actions from a single film.

Let's return to our *Die Hard* example, which we can in fact break into four separate stages:

- 1. A shot of packing tape from McClane's perspective (Figure 5),
- 2. A shot of McClane's gun taped to his back (Figure 6),
- 3. A shot of McClane putting his hands behind his head (Figure 7), and
- 4. Shots of McClane reaching for the gun behind him and firing it at the criminals (Figures 8 and 9).

These four events connect in viewers' minds in the way that questions connect to answers, following a format that Noël Carroll has called an "erotetic model of narrative." According to Carroll, audiences "expect answers to the questions that earlier events have made salient" (494). The shot represented in Figure 5 poses a question, "How will McClane use the tape?" The shot in Figure 6 answers that question some three minutes later ("McClane has taped a gun to his back") and poses another ("How will McClane use the taped gun?"). The shot in Figure 7 answers that question ("He has put his hands behind his head and pretended to surrender to the criminals") and poses another ("How and when will he grab the gun behind him and shoot?"). The shots represented in Figures 8 and 9 answer that question. By generating a series of questions and answers, the planting-and-payoff device encourages audiences to link different plot elements. Erotetic linkages, according to Carroll, afford a narrative "an extraordinary degree of neatness and intellectually appealing compactness" (495), connecting and unifying separate events.







Figure 6



Figure 7



Figure 8



Figure 9

Figures 5-9. A series of shots from Die Hard that link narrative events by following a question-and-answer format

Fluent Processing

In psychology, *processing fluency* refers to the ease with which someone assimilates information. Planting and payoff helps ease processing, as spectators match incoming information (payoff) to information in memory (plant). Numerous empirical studies have demonstrated that processing expected information is quicker, easier, and more automatic than processing unexpected information (Benjamin and Bjork; Jacoby and Dallas; Whittlesea and Williams). On the flip side, studies show that information that disconfirms expectations takes longer to assimilate and demands more effortful processing in order to understand the predictive failure (Jentzsch and Sommer; Matt et al.; Stern et al.).

According to the Processing Fluency Theory of aesthetic pleasure, advanced by psychologist Rolf Reber and his colleagues, properties that ease processing increase pleasure (Reber, Schwarz, and Winkielman). Whereas other studies have shown that moderate cognitive challenge increases both pleasure and interest (Berlyne, *Aesthetics*; Silvia), Reber finds that displeasure results immediately from difficult processing. The

contradiction in these findings suggests that different cognitive activities may generate conflicting affective responses. So while we may feel bored by an unchallenging narrative, it may still satisfy a desire for immediate understanding.

A host of studies have found that people prefer prototypical, average, symmetrical, and easily identified objects because of the efficiency, speed, and ease of processing (Langlois and Roggman; Martindale and Moore; Rhodes and Tremewan; Whitfield and Slatter; Whittlesea). Studies of the "mere exposure effect" find that people prefer familiar objects (drawings, photographs, words) because they are easier to process (Bornstein; Zajonc). Studies also show that people experience disrupted processing as unpleasant, at least initially (Reber, Winkielman, and Schwarz; Winkielman and Cacioppo). Easy processing is spontaneously pleasing, the studies find, producing "subjective feelings of fluency and comfort" (Roese and Sherman 101).

By generating expectancies for future information, the planting-and-payoff device eases processing, enabling immediate understanding of a payoff that conforms to expectations. So, if the theory is correct, one of the reasons (however minor) that we enjoy watching McClane grab the gun taped to his back and shoot the criminals (Figures 8 and 9) is that we can easily assimilate his actions, having mentally prepared for them after the plants (Figures 5, 6, and 7).

Successful Prediction

With typical planting and payoff, the spectator predicts an event and then sees her prediction satisfied somehow. Some researchers have argued that the brain offers biological rewards activated merely by successful predictions. Huron defines this "prediction response" as "our response to whether our prediction was satisfied (positive valence) or thwarted (negative valence)" (7). According to Huron, the brain rewards accurate prediction with pleasure, even when the result is unwanted. So in narratives in which plants point to an adverse outcome—as in *Umberto D.* (1952), which predicts the deterioration of our protagonist and then shows it to us—the "I knew it" response kicks in anyway, affording us some degree of pleasure, despite our protagonist's unhappy end.

Support for this theory comes from several sources. Studies have found that the immediate response to an inaccurate prediction is negative affect (Mandler; Olson et al.). As I noted earlier, researchers have found that accurate predictions increase processing fluency and that people find fluent processing affectively pleasant. Trainor and Zatorre found physiological evidence from EEG, fMRI, and MEG studies that accurate predictions when listening to music activate the dopaminergic reward system, which is linked to pleasure. Together, this research suggests that people have an automatic positive response to accurate predictions. If true, then planting and payoff capitalizes on an inherent prediction response, offering us spontaneous emotional rewards.

Incongruity Resolution

The Processing Fluency Theory of aesthetic pleasure and the Prediction Response Theory do not entirely account for our responses to either expected payoffs or surprising ones. Indeed, as many researchers have noted, people find surprises pleasurable. Frank Kermode acknowledged the prevalence of surprise in fiction when he said that a "story that proceeded very simply to its obviously predestined end would be nearer myth than novel or drama" (18). How do we resolve the discrepancy between the conflicting theories of aesthetic pleasure? Recall that we may experience multiple, contradictory pleasures and displeasures in parallel and that we needn't settle the contradiction. So, whereas deviations from expectation may generate displeasure in one area (disrupting processing fluency and successful prediction), they might generate pleasure in another.

Disrupting expectations, many psychologists have found, increases attention, arousal, pleasure, and interest. Psychologists have shown that surprising stimuli elicit rapid and automatic attention (Bartholow et al.). Gaver and Mandler report that a discrepancy between expectations and outcomes results in autonomic (sympathetic) nervous system arousal "in part to prepare the organism to cope with a changing environment" (265). Steinbeis, Koelsch, and Sloboda found in EEG responses that unexpected events in music caused people to respond with greater electrodermal activity, tension, and emotionality. And Berlyne found that moderately arousing stimuli (e.g., moderately surprising, incongruous, or complex stimuli) increased an object's hedonic value ("pleasingness") and that more arousing stimuli increased epistemic value ("interestingness") (*Aesthetics* 213–20).

What makes incongruity pleasurable? Much of the research on the pleasures of incongruity comes from humor studies. The Incongruity Theory of humor dates back to Aristotle's *Rhetoric*, and Kant, Beattie, Schopenhauer, and others advanced it further. The theory holds that humor results when someone suddenly recognizes a violation of expectations. For humor theorist John Morreall, the value of incongruity rests in the "drive to seek variety in our cognitive input" ("Funny Ha-Ha" 201). Too much congruity between expectation and outcome can grow tiresome. Incongruity prevents a narrative from becoming too orderly and straightforward. "Instead of following well-worn mental paths of attention and thought," Morreall says, "we switch to new paths, notice things we didn't notice before, and countenance possibilities, and even absurdities, as easily as actualities" (*Taking Laughter Seriously* 91). Incongruities exercise our cognitive agility and creative problem-solving capacities, adding richness and variety to a plot that might otherwise come off as dull and predictable.

In the latter half of the twentieth century, empirical psychologists began testing and developing Incongruity Theory. Psychologists James M. Jones, Thomas Shultz, and Jerry Suls each proposed an Incongruity-Resolution Theory, which posits that humor arises when the perceiver meets with an incongruity and feels motivated to resolve it. Numerous ethnographic and controlled psychological studies support Incongruity-Resolution Theory. Shultz and Horibe found that children considered verbal jokes funniest when the jokes had both an incongruity and a resolution. The joke "Why did the cookie cry? Because its mother had been a wafer so long" enables

the listener to find a resolution between incongruous story elements (cookies and absences). By contrast, children found jokes less funny when the jokes had an incongruity and no resolution ("Why did the cookie cry? Because its mother was a wafer") or a resolution and no incongruity ("Why did the cookie cry? Because he was left in the oven too long"). Researchers have also identified incongruity-resolution properties in the majority of jokes, riddles, and folktales from different cultures (Suls).

Cognitive research on "insight" provides additional support for the notion that people enjoy deviation from expectation, provided they can resolve the incongruity. "Insight" refers to the "aha" moment when someone suddenly grasps a solution to a mental problem (Kaplan and Simon; Metcalfe). With insight, a solution pops into consciousness as we understand relationships among elements in a new way or break free of unwarranted assumptions (Mayer; Smith et al.). Scientific evidence, including evidence from neural activity, testifies to the joy, satisfaction, and other positive emotions that attend insight (Gick and Lockhart; Gruber; Jung-Beeman et al.; Seifert et al.).³

Humor and insight research suggest that the planting-and-payoff device creates pleasure even when it violates expectations, provided the payoff affords us insight and incongruity resolution. Whodunits regularly offer this sort of pleasure. A successful whodunit prevents us from correctly predicting the murderer but then enables us to realize, in retrospect, that the plants have pointed toward that very outcome all along. When *Murder on the Orient Express* (1974) reveals that all of Hercule Poirot's suspects committed the murder together, it seems at first incongruous, because it violates generic expectations (whodunits traditionally have one murderer, not many), but then it seems perfectly correct because Poirot had already demonstrated that each suspect had a motive. Once we sort out the unexpected outcome, we can enjoy the pleasures of insight and incongruity-resolution. We need only shift to an alternate schema (in which multiple murderers becomes an acceptable story outcome), and the incongruity disappears. Aha!

Most cognitive effects of planting and payoff work unconsciously; however, narratives such as *Murder on the Orient Express* afford us conscious awareness of the planting-and-payoff device itself. To complete our investigation, we should endeavor to understand some of the aesthetic benefits, and potential hazards, that result from that awareness by examining an important meta-cognitive effect of the device.

Artistic Appreciation

Part of the pleasure of a whodunit like *Murder on the Orient Express* comes from our realization that the movie has fooled us. At that point, we might retrace the plot, revisiting flashbacks and interview scenes, for clues to the unexpected outcome. Bridgeman notes that when "predictions go awry we become aware of them" (149). Roese and Sherman similarly note that surprise leads us to deeper and more "careful analysis" as we attempt to grasp our predictive failure (102). Such careful analysis brings the mechanics of the planting-and-payoff device into consciousness and, if

storytellers use the device with skill or inventiveness, inspires appreciation for the storytelling artistry. By the same token, if some misleading use of the device seems clumsy or trite, we may grow conscious of an aesthetic weakness in the work.

Any impressive use of planting and payoff can spark artistic appreciation, but twist films and puzzle films regularly elicit this form of attention, particularly when they plant misleading information that pays off in an alternate schema. Here, our default schema leads us to expect an outcome that the narration never realizes, but a dormant schema, activated in retrospect, points to the actual outcome. The viewer, then, gets to experience an incongruity based on one schema and a resolution based on another. The Sixth Sense (1999) conceals from us the knowledge that one of the main characters is a ghost. The surprise revelation at the end of the film caused an internet cottage industry of appreciative commentary, as people retraced the movie for hidden and misleading plants. Like a witty joke, the narrative shift causes us to recognize our own surprise and appreciate the mechanics by which the work has manipulated our expectations. Scholars have written entire books appreciating twist films and puzzle films (see Buckland, Hollywood and Puzzle Films; and Kiss and Willemsen). In such narratives, a normally unconscious thinking process (anticipating future events) comes into consciousness after a surprising outcome. With some twist films—such as Diabolique (1955), Psycho (1960), and A Tale of Two Sisters (2003)—commentators have regarded filmmakers' manipulations as not just clever but brilliant.

Our appreciation relies on our confidence that the narration has played us fairly. The rule of "fair play" demands that an observer has a chance to discover the solution to the puzzle along the way and that the solution comes across as causally motivated. As a counterexample, consider Stage Fright (1950), which, commentators have complained, includes a false flashback. Director Alfred Hitchcock himself said, "I did one thing in that picture that I never should have done; I put in a flashback that was a lie," to which François Truffaut replied, "Yes, and the French critics were particularly critical of that" (Truffaut 139). Stage Fright violates "fair play" because it presents the flashback as though it were objectively true and trustworthy.4 Commentators have similarly found The Woman in the Window (1944) unsatisfying because the film speeds past a host of moral and psychological complexities in order to drive the story toward a happy it-was-only-a-dream ending. Film scholar Paul Jensen called the twist "a cheat used to rescue the director," Fritz Lang, who ultimately found it necessary to defend his ending (Jensen 156; Lang 23).⁵ Phelan considers this type of dream revelation "ethically and aesthetically flawed." He finds aesthetic value in surprise endings only when the narration has prepared us for them and when they reward, rather than undermine, our emotional investment in the characters (Experiencing Fiction 95).

In both cases, storytellers have used a "cheap plot trick" of the type that, according to Marie-Laure Ryan, makes "the sophisticated reader groan" (56). For Ryan, cheap plot tricks rely on "an event that is poorly prepared, that looks forced, that seems to be borrowed ready-made from a bag of tricks and whose function for the plot as a whole is too obvious" (57). We may still appreciate these movies—I, for one, find *The Woman in the Window* brilliant in other ways—but nonetheless groan at their cheap use of planting and payoff. However, when the narration plays fair, when it does not rely on arbitrary resolutions or clichéd devices, and when storytellers employ a mis-

direction with skill and originality, then we are liable to appreciate a misleading use of planting and payoff.

Conclusion

This essay has attempted to illuminate an underappreciated, but nonetheless fundamental, component of narrative aesthetics: how choreographing audience's narrative expectations through the planting-and-payoff device creates various forms of pleasure. Given the essay's piecemeal approach, other researchers may discover further pleasures afforded by planting and payoff, but any full aesthetic account of the device must, I believe, include the cognitive effects studied here. The device, we have seen, pleases us and interests us in multifarious ways, appealing to our desire for focus, understanding, intellectual challenge, rest and resolution, emotional and cognitive variety, and harmonious integration, as well as our desire to prepare for the future, to appreciate art, and to be right.

At the beginning of this study, I distinguished planting and payoff from narration in general. Planting and payoff, I said, is not just storytelling. Rather, it is a device that storytellers employ to create specific aesthetic effects. But the device is so pervasive, so integral to the narrative arts, that I can hardly imagine a narrative artwork that does not use it at all. One of the primary talents of a successful storyteller is the ability to orchestrate our expectations—to activate and adjust them; to satisfy, thwart, or constrain them; to bring them to consciousness or cause us to rethink them; to manipulate them in ways that spark stress, relief, frustration, exhilaration, comfort, and pleasure. This age-old storytelling device never grows tiresome, never becomes cliché, and storytellers continue to employ it with creativity and flare, because it appeals to something very deep in our psychology—the need to anticipate and gird ourselves for the future.6

Endnotes

I wish to thank James Phelan for his care and editorial intelligence and Timothy Justus for his advice about music psychology.

- Genre constitutes one set of schematic expectations activated by artworks. Indeed, since Psycho (1960), the practice of ending horror films on a moment of emotional instability and story irresolution has grown so common that viewers of Carrie likely expect the epilogue to include some narrative disruption. Still, dynamic expectations, because they elicit automatic responses, can overpower other types of expectations. The interaction between generic and dynamic expectations warrants further study.
- For more on narrative tension, delay, and release, see Brooks 103-12 and Phelan, Reading People, Reading Plots 15–20.
- For more on the pleasures of insight and incongruity-resolution in narrative experience, see Berliner, Hollywood Aesthetic 58-69.
- 4. For more on Stage Fright's false flashback, see Bordwell 61 and Turvey 155-56.

- 5. For a discussion of reactions to *The Woman in the Window*'s twist ending, see Cossar.
- 6. For a systematic analysis of the different ways in which storytellers use planting and payoff and the ways in which different uses of the device appeal to individual aesthetic desires, see my companion essay, "Expect the Unexpected: *Psycho* and the Types of Planting and Payoff."

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