**Scholarly Exploration of the Creative Process:**
**Integrating Film Theory and Practice**

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## Introduction

The problematic relation between theory and practice has vexed Western thinking for the past two and a half thousand years, and it is no surprise to discover this problem troubling film studies degree programmes and filmmaking courses. In the 1970s, Vlada Petrić (who co-founded the Harvard Film Archive in 1979 with Stanley Cavell and filmmaker Robert Gardner, and who curated the Archive until 1998) wrote a series of papers addressing pedagogical problems in the teaching of film:

> The split between theory and practice in the study of cinema results in a ludicrous situation: students in cinema studies lack the practical experience without which they are unfit to fully comprehend the specificities of the medium, and students in film production are deprived of the theoretical/historical background which is crucial to their development. […] A university curriculum cannot be conceived with the intention of avoiding scholarly exploration of the creative process or the historical and theoretical analysis of an artistic achievement. (1976a: 3–4)

Petrić proclaimed the need to integrate theory and practice by developing a pedagogy that would combine film theory, film history, film analysis, and film practice. The core of this integrated approach consists of the shot-by-shot analysis of film sequences in order to study what he called the filmmaker's (usually the director's) 'cinematic strategy' – their filmmaking knowledge plus practical shooting procedures and methods.

In this chapter I develop a theoretical understanding of film practice via Aristotle's concepts of *epistêmê*, *technê*, and *praktikos*, although these concepts need to be reformulated and updated with recent advances in analytic philosophy, particularly Jason Stanley's rethinking of the opposition between 'knowing-that' and 'knowing-how' (2011). My aim in this chapter is therefore to develop a theory of a specific type of knowledge – of filmmaking as a problem-solving activity, which includes knowledge of the *filmic* options available to solve *filmmaking* problems. This theoretical understanding of film practice will be used to

examine the way technique is conceptualised in filmmaking manuals (especially Karel Reisz's *The Technique of Film Editing* [1968]) and in Petrić's studies of cinematic strategy in his shot-by-shot analysis of film sequences (Petrić 1976b; 1982; 1987). I argue that the core competence behind cinematic strategy consists of first-person modal knowledge that guides 'decision-making' and 'problem-solving'.

**Theory, practice, poetics**

Aristotle articulated the theory/practice opposition as part of his three-way distinction between theoretical, productive, and practical knowledge:[1]

- Theory: *epistêmê*, wisdom (*sophia*)
- Production: *technê*, *poiêtikê* (creating or making [*poiesis*] an artefact)
- Practice: *praktikos/phronesis/praxis* (activities and experiences)

Aristotle separated theory from practice and defined theory as self-sufficient and autonomous: it is general, abstract, necessary, predetermined invariant knowledge of first causes and principles (as spelled out in Book I of *Metaphysics*). Practice in his strict definition (*praktikos*) refers to actions, experiences, and perceptions; it is particular and contingent, and is based in part on chance and conjecture. Between theory and practice lies poetics or *technê*: '*Technê* involves having the requisite rational conception of what needs to be made and the understanding of how to make it which precedes the actual production of it' (Mikhailovsky n.d.). In this definition, *technê* is a form of knowledge that has a function or purpose – the production or making of concrete artefacts (whereas theory in itself does not produce artefacts). *Technê* is not invariant knowledge, but neither does it consist of contingent and *ad hoc* actions; instead it is historical productive knowledge generated from an external cause guided by theoretical precepts that bring artefacts into existence. Possessing *technê* means that one understands (but does not need to physically carry out) how to make an artefact, which involves a practitioner (the efficient cause) shaping a physical substance (material cause) via a pre-determined plan (formal cause) to realize the artefact's function or purpose (its final cause). In Aristotle's poetics, the artefact's purpose, or function, determines its form, and the knowledge used to produce the artefact, plus the process of making it, reside in its form. We can therefore analyse this form not simply in itself, but in terms of its multiple causes (as defined by Aristotle) – its functions and the *technê* that produced it

(which I define below in terms of decision-making and problem-solving). The actual process of making an artefact may be successful or unsuccessful, due to error or contingent factors: one may possess *technê*, but one's physical ability to carry it out (*praktikos*) may be imperfect; knowing how is distinct from ability.[2] Although Aristotle separated theory from practice and positioned poetics in the middle, he argued that poetics is governed primarily by theoretical knowledge. In other words, he integrated theory (*epistêmê*) and poetics (*technê*) while separating both from practice (*praktikos*). He therefore maintained a clear distinction between theory and practice, while forging close links between theory and poetics.

Aristotle also conceived poetics as a two-way process: it is the knowledge practitioners need in order to make an artefact but also the knowledge critics need in order to understand and explain an artefact – to explain its provenance, how and why it was made. *Technê* and poetics are close to theory in that they designate the knowledge (but not the physical activity) the practitioner needs to make an artefact and the critic needs to explain it. The practitioner does not contribute material to the artefact, but instead imposes on it one type of knowledge (*technê*), a particular way of thinking that shapes and forms it. The critic begins with the finished artefact and studies, not the artefact in itself, what it is, but instead the artefact as the end result of *technê* and poetics. The critic's task is to identify in an artefact's form traces of its making, and from those traces rationally reconstructs the knowledge (the *technê* and poetics) that produced it. In one of his favourite examples, house building, Aristotle argued that 'the act of building is in the thing that is being built' (*Metaphysics*, quoted in Dunne 1993: 339). The final product is not autonomous but is tied to the process of its making and to its final cause. In Aristotle's three-way distinction, practice seems to be cut off from *technê* and theoretical knowledge. However, according to Joseph Dunne, Aristotle's statement on house building does link up *technê* and *praktikos* to the extent that the physical matter of the artefact embodies the *technê* in its form. For Aristotle, all physical objects, including artefacts, combine matter and form. However, we will need to supplement Aristotle's account of poetics with recent developments in analytic philosophy to spell out in adequate detail the way theory relates to practice (and vice versa).

**Knowing-that and knowing-how**

In twentieth century analytic philosophy the theory/practice opposition was formulated in terms of knowing-that and knowing-how. Gilbert Ryle (2000 [1949]) regarded know-that as systematically organized propositional knowledge: just like Aristotle's formulation of theory (*epistêmê*), know-that is explicit, deductive, contemplative, and resides in an abstract realm

of pure thought. In contrast, know-how is tacit: just like Aristotle's formulation of practice (*praktikos*), know-how is implicit, inductive, particular, and resides in behaviour. Like Aristotle, Ryle (2000 [1949]: chapter 2) argued that know-how is distinct in kind from know-that. But, unlike Aristotle, he focused almost exclusively on know-how, defining it as a disposition – a tendency or inclination to behave in certain ways under particular conditions – rather than as propositional knowledge. Ryle's position is behaviourist because he does not refer to propositions or inner states of mind to explain behaviour; instead, he argued that knowing how to do something is simply having the ability to do it.

Recent developments in analytic philosophy challenge Ryle's position. In *Know How* (2011) Jason Stanley argues that, when talking about know-that and know-how, it is not a matter of privileging one side over the over. For Stanley, know-that is not isolated from action, and know-how is not isolated from propositional knowledge: in other words, know-how is a form of know-that and know-that is a form of know-how. Far from being isolated from each other, know-that and know-how overlap and share many properties. This position argues that intellectual activity informs actions, that knowing-how is a manifestation of knowing-that. But the reverse is also true: knowing-that, or theoretical knowledge, is not purely contemplative and abstract, but is shaped by mental acts and physical actions: 'the value of knowledge lies in its connection to action' (Stanley 2011: viii).[3]

More specifically, Stanley's position consists of several interlinked components: (i) know-how is a form of know-that; (ii) knowing how is knowing answers to the question of how to do something; (iii) knowing how is first-person knowledge (self-knowledge); (iv) knowing how is modal ((iii) and (iv) are closely linked, for knowing how to do something = knowing how *you would* or *could* do it); (v) know-how is functional; (vi) know-how is distinct from physical ability; and (vii) know-that is not inert knowledge.

Stanley critiques Ryle and supports the 'intellectualist' position, which re-defines practice (Aristotle's third category) as a propositionally-informed activity based on theoretical knowledge, or know-that. Stanley gives the example of learning how to swim: 'learning how to do something is learning a fact. For example, when you learned how to swim, what happened is that you learned some facts about swimming. Knowledge of these facts is what gave you knowledge of how to swim' (2011: vii). Stanley then carefully modifies and justifies this counter-intuitive statement: 'Of course, when you learned how to swim, you didn't just learn any old fact about swimming. You learned a special *kind* of fact about swimming. The fact you learned is the proposition that answers a question – the question "How could you swim?" Knowing how to do something therefore amounts to

*knowing the answer to a question*' (2011: vii; emphasis in the original). To reach this conclusion, Stanley has not simply imposed the traditional definition of propositions on activity and practice. Instead, he challenges and revises the notion of what a proposition is. Traditionally, a proposition is the semantic content of a sentence that states or affirms something. It is traditionally conceived as purely intellectual, as passive and contemplative, and distinct from action. This understanding of propositional knowledge constitutes what Aristotle called theoretical knowledge, and what Ryle defined as know-that. In challenging this traditional account of propositions, recent analytic philosophers have instead proposed *functional* and *act-based* conceptions of propositional content, linking propositions to know-how. Stanley's argument that know-how is functional means that it involves a practical way of thinking about objects, to seeing objects in terms of the functional role they play (2011: 123–26). This functional perspective is also central to Aristotle's concept of *technê*, an activity based on theoretical knowledge that has a purpose. To think of a hammer in a practical way is to conceive it not as an object in itself but in terms of its function of knocking in nails. We shall see below that studying an artwork from a functional perspective, in terms of a practical way of thinking, involves conceiving it as the solution to a series of artistic problems.

Crucially, extending knowledge to practice and activity redefines propositions as modal first-person knowledge: propositions are not disembodied and impersonal but are tied to the self and to action. What this means is that one of the preconditions for performing (or intending to perform) an action, as well as knowing what to do at what time, is that an individual must know that they can perform that action. Know-how therefore consists of a series of know-that propositions that represent to an individual how to perform an action. Ryle ruled out propositional knowledge guiding action because, he argued, it leads to an infinite regress: before performing an action, we need to check our propositional knowledge, but then we need to check that we checked our propositional knowledge, and so on *ad infinitum*. The regress argument enabled Ryle to separate know-how from know-that and to develop an anti-intellectualist position by downplaying know-that. Stanley argues that there is no such infinite regress, for individuals directly know about and are guided by their propositional knowledge, which they do not need to check in advance (2011: 12–22; 25–29). By overturning the regress argument, Stanley concludes that both know-how and know-that are based on propositional knowledge, that knowing how to do something is premised on knowing that.

Although Stanley does not discuss Aristotle or poetics, his argument that propositional knowledge guides practice explains the way theoretical propositions, poetics, and practice work together. When viewed through Stanley's work, practice and poetics (as defined by Aristotle) are brought closer together, for both are guided by propositional knowledge. ('Guiding' is normative, for it prescribes a certain way of performing an action and excludes other ways, an issue taken up in the section on film manuals.)

**Expertise and creativity**

For Ryle, expert knowledge is acquired through inductive behaviour (observation, imitation, stimulus, response, and conditioning) rather than the learning of propositions. In contrast, Stanley defines knowing how and the performance of actions in terms of propositional knowledge, which defines the expertise of practitioners. For Stanley, the transition from novice to expert involves proficiency in deploying propositional knowledge that constitutes knowing how:

> The novice must repeatedly engage in distinct actions of 'consulting' the propositional knowledge she has acquired. […] Once one achieves expertise, one […] no longer needs to engage in a distinct action of *consulting* the propositional knowledge, since one is in a position to apply the propositional knowledge directly to the situation at hand. (Stanley 2011: 184; emphasis in the original)

For both novice and expert, knowing how to solve a problem involves knowing *that* there are prescribed ways of problem-solving and knowing the most relevant way. But, unlike novices, experts draw upon their activated propositional knowledge to carry out their tasks (to answer a question and solve a problem) without apparent effort; what in fact happens is that expert propositional knowledge becomes the expert's first-person modal knowledge.

Stanley's intellectualist account of expertise is akin to Noam Chomsky's rationalist theory of linguistics. For Chomsky, the central factor linguists need to address is the language user's ability to produce and understand new and novel sentences based on limited exposure to language: 'a grammar mirrors the behavior of the speaker who, on the basis of a finite and accidental experience with language, can produce or understand an indefinite number of new sentences' (1957: 15). The language user's knowledge of language is not simply acquired through exposure to speech and writing, but is based on an innate cognitive ability, the language faculty, which creates and understands new sentences from the generative capacity

of grammar – from the expansion of a finite and fixed number of core or kernel sentences into a potentially infinite number of sentences, which is achieved by repeatedly applying rewriting and transformational rules to the finite kernel sentences. According to this early model of transformational generative grammar, knowledge of language consists of finite kernel sentences, finite rewriting rules, and finite transformational rules, from which speakers can generate and understand a potentially infinite number of sentences.

Chomsky, in effect, developed a theory of linguistic 'production' in Aristotle's sense – the purposeful creation or making (*poiesis*) of new artefacts (sentences) based on a finite series of rules and conventions, which constitute the knowledge (*epistêmê*) of the language user. Chomsky's work therefore presents a formal model of the production or creation of artefacts.[4] But we need to distinguish three senses of creativity: *rule-following* (e.g., routine production of new artefacts guided by pre-existing rules); *rule-changing* (inventive production of novel artefacts guided by the innovative use of rules, or deliberate breaking of them); and *free unfettered invention*.[5] The first sense of creativity is traditionally aligned to craft, and the second to art. The third (Romantic and existential) sense, based on what Keats approvingly called 'negative capability', is untenable, for it ignores contextual and institutional constraints, reduces creativity to the random contingent acts of isolated individuals, and cannot be explained or taught. The first two types of creativity can be taught (and codified in manuals and textbooks).

Michael Baxandall's discussion of early (analytical) cubism offers an instructive account of rule-changing creativity in terms of problems and solutions (1985: chapter 2). His over-arching issue is to ask why analytical cubist paintings were created around 1908–1912, and how an example such as Picasso's *Portrait of Kahnweiler* came to take the specific form it did (1985: 49). Baxandall conceives Picasso as addressing three problems common to painting: 1. General problem: representing three-dimensional space on a two-dimensional surface. Old solution: use perspective to create the illusion of depth, the impression that the canvas is a transparent surface opening on to a volumetric space defined in terms of converging lines. This old solution tries to deny the flat surface of the canvas. Different solutions emerged in the late 19th century. The Impressionists, for example, played on the tension between surface and depth. Picasso addressed this problem in his early cubist paintings. 2. Tension between form and colour. This tension is also a general problem, but received new solutions in cubist painting. These cubist solutions in part recognize the stability of form in relation to the variability of colour, which in turn frees up colour so that it does not need to fit into the painting's form. 3. Time: painting represents a moment of

experience, but takes much longer to create, resulting in a tension between represented time and time of production. Picasso and other cubist painters acknowledged this tension by incorporating into their paintings the temporal dimension, by showing the subject from several perspectives (fragmenting the internal space), with the subject lit differently from each perspective.

Picasso addressed these primary problems between 1908–1912 and discovered rule-changing solutions. Moreover, as Picasso painted, secondary unexpected problems emerged, including figure/ground relations, illumination, scale, and texture: 'There is a problem, newly heightened by the leaving open of the plane edges of the figure, of distinction between figure and ground, between man and what lies around and behind him' (1985: 64). Picasso's solution was to re-establish the distinction via tonality and hue: the figure is darker and less yellowish than the background. This modification of tone and hue acknowledges the painting's temporality by giving the impression of a change in illumination over time. This secondary unexpected problem of hue demonstrates that not all creative problems can be foreseen in advance, for some emerge only when the artwork is far advanced.

Rule-changing creativity defined in terms of problems and solutions is also evident in filmmaking. Cinematographer Bill Butler said in an interview that he conceives of cinematography as a problem-solving activity: 'the day-to-day business of making movies is a matter of problem-solving. You are constantly problem-solving from the time you arrive on the set until you quit shooting in the evening' (in Schaefer and Salvato 1984: 76). We can see his creative and innovative problem-solving at work in his cinematography on *Jaws* (1975): neither screenwriters Peter Benchley-Carl Gottlieb nor storyboard artist Tom Wright conceived of filming the action in the sea at water level. This technique was made possible by Butler's invention of the water box – a box with glass at the front, into which he lowered the camera when filming at sea. Butler did not develop the water box as a device for getting flashy camera angles just for the sake of it. Instead, he designed the water box to solve a particular problem in *Jaws*: to increase the audience's psychological engagement with the film's characters in the water, by placing the camera with them on the water's surface.

**Filmmaking manuals**

Following explicitly stated normative rules offers filmmakers a reference point with which to define the boundaries of their work. If a filmmaker says that they are creating something completely original, outside of institutional constraints and rules, what they are in fact doing is simply following rules (usually inconsistently) that they are unaware of. Knowing the rules

enables filmmakers to create innovative films in a measured (rather than haphazard) way, by deliberately changing or breaking those normative rules. Such rule-changing/breaking is sometimes mistakenly identified with unfettered creativity; however, breaking rules is an unrealized but potential option rather than a completely original invention, for rule-breaking is still defined in terms of rules and conventions (is understood as deviation from the rules).

An expert practitioner's knowledge includes propositions that guide his or her decision-making process – to choose the most appropriate action within a set of prescribed norms, in which each option involves endorsing a set of implicit normative assumptions about what does and what does not follow from choosing one particular action (in chess, for example, an essential component of a grandmaster's knowledge involves seeing several moves ahead). Awareness of these implicit assumptions and norms (which are also propositions) enables the expert to choose the appropriate action and to distinguish between routine and innovative actions.

Expert actions are guided by a high level of activated propositional knowledge, whereas in unskilled actions this knowledge remains undeveloped. The expert practitioner is not simply producing artefacts, but is also producing solutions to problems (in Stanley's terms, producing answers to questions): the expert knows what the problem is, and possesses the necessary knowledge and decision-making procedures to solve it. With their knowledge, experts know of many (perhaps all the) potential ways to solve a problem (including innovative, rule-changing/breaking, and previously unrealised solutions), whereas the novice may only know a few preferences.[6] Expert action involves choosing an appropriate option from the available preferences, which is not simply a matter of personal choice, but is determined by intrinsic and extrinsic factors (internal constraints such as the nature of the film medium, the technology, and external constraints such as commitment to a worldview, tradition, genre, social norms) all of which determine what a problem is, what constitutes a solution, and what preferences are available at any given time.[7]

An expert critic or practitioner can judge whether the right option was chosen (a matter of theoretically-informed *technê*) and whether it was carried out effectively (a matter of *praktikos*). Karel Reisz was both critic and practitioner: he wrote the first edition of *The Technique of Film Editing* in the 1950s and made feature films from the 1960s to the 1990s (including *Saturday Night and Sunday Morning* [1960] and *The French Lieutenant's Woman* [1981]). In *The Technique of Film Editing* he criticized Hitchcock for filming the whole of *Rope* (1948) using only long takes and camera movements rather than the classical Hollywood industry norm of editing together several camera setups; in Reisz's expert

opinion, Hitchcock's technical preferences decrease the film's dramatic effectiveness. In the film's denouement, Rupert (James Stewart) accuses Brandon (John Dall) and Phillip (Farley Granger) of strangling their friend David Kentley. Rupert pulls out of his pocket the piece of rope they used to strangle Kentley. The revelation and reaction are filmed in one continuous take with camera movement:

> Suddenly [Rupert] turns around to face the boys, holding the rope in front of him (*2b*) – giving the final proof that he knows who murdered David. While he goes on speaking, the camera slowly pans away to the right, recording in its path first the corner of the room (*2c*), then a neon sign visible outside the window (*2d*), and then finally reaching the reaction shot of the boys (*2e*). It takes the camera 10 feet [6.5 seconds of screen time] to reach the boys and a further 5 feet [3.25 seconds] to come to rest on them. (1968: 233)

Reisz illustrates his description with frame enlargements, labelled 2a to 2e (reproduced on p. 235 of *The Technique of Film Editing*). He then mentions another option from the potential preferences available, a straight cut from the image of Rupert holding the rope (2b) to the reaction of the two murderers (2e):

> If the film had been normally edited, the editor would at this point [*2b*] have cut to the reaction shot (*2e*) so that the spectator could immediately see the effect of the previous image. The image *2b* poses, as it were, the dramatic question 'How will they react?' and *2e* answers it: the most effective continuity is therefore to cut straight from the one to the other. As it is done here, there is a considerable interval between seeing the rope and the boys' reaction. (1968: 234)

Reisz not only focuses on the film but also emphasises the role of editor and the effects of editorial decisions on spectators. He justifies his hypothetical technical option (a straight cut) by describing the images in terms of a logic of question and answer, and he defends his option as more effective, for it eliminates inessential details (the corner of the room, the neon sign) that Hitchcock's technical choices take several seconds to film. Reisz argues that his option is more effective than Hitchcock's because it is the most efficient technical solution to solving the filmmaking problem in this scene – how to create dramatic conflict between Rupert and the murderers.

Reisz also addresses the potential justification of Hitchcock's technical choices in this denouement scene – that they create suspense for they delay the murderers' reaction. But Reisz argues that the technical choices Hitchcock employed to create the delay is ineffective: 'The delay in the reaction is brought about by showing the audience something that has nothing to do with the story: the dramatic conflict is momentarily side-tracked' (1968: 236). Instead, 'If the director had not been bound to this particular formula of presentation, he could have delayed the reaction equally well by cutting' (1968: 236). In other words, delay could still be achieved by holding the shot of Rupert for three or four seconds before cutting to Brandon and Phillip. According to Reisz, this option is better because it keeps on screen only relevant story information while eliminating inessential details.

Reisz uses a negative example to demonstrate how an editor's *technê* or filmmaking knowledge, his/her decision-making and problem-solving abilities, controls timing and suspense. He criticises Hitchcock's *technê*, specifically his decision-making process – his technical choices (long takes and camera movement), as well as the technical presentation or actualization of the shots (for the large studio camera moves slowly and not always smoothly).[8] By the 1940s Hitchcock was of course a master filmmaker who possessed expert knowledge of all the filmmaking options available to him. The reasoning behind his choices can be justified as technical experimentation with untried options, a creative attempt to break the rules of scene dissection – which he had demonstrated in previous (and future) films. In the end, *Rope* is an exercise in rigorously and consistently sticking to two inflexible choices (sequence shots and camera movement) in an attempt to challenge and break industry norms, but such an exercise ended up severely limiting the film's dramatic effectiveness. Reisz presents expert knowledge by discussing a set of technical preferences and demonstrating his own expertise by choosing different options. Nonetheless, he prescribes to practitioners to follow the rules when making decisions and solving editing problems, rather than to experiment via rule-breaking.

**Film studies: textual analysis and cinematic strategy**

Film studies pedagogy is dominated by textual analysis, a close (sometimes shot-by-shot) analysis of film sequences. Textual analyses can be divided into six main categories, each generating different types of knowledge and insights about film:

- Technology

- Film Form
- Film Style
- Aesthetic Evaluation
- Storytelling (Narrative and Narration)
- Interpretation.

When a textual analysis describes camerawork, editing, sound design, or lighting, it focuses on the technological creation of a film. When a textual analysis studies film's formal properties, it refers to medium-specific characteristics which shape that film. When a textual analysis takes film style to be its main focus, it examines textual traces of how an author, period, place, or school manipulated form in a specific and consistent way. When a textual analysis passes judgment on a film's formal properties, defining it as art or non-art, or when it focuses on the experience and effects of film form and style on spectators, it becomes an aesthetic analysis. When a textual analysis examines storytelling, it focuses on narrative structure, processes of narration, or both. And when a film is interpreted, the analysis tries to explain that film in terms of its underlying social, psychological, and ideological values. Of course, many textual analyses combine categories; each textual analysis can in fact be distinguished in terms of the emphasis it places on the various categories. The manuals discussed in the previous section, for example, focus on technology and aesthetics – they jump from a technological analysis to an aesthetic evaluation. A formal analysis focuses on non-mimetic dimensions of film; more accurately, a radical formalist analysis only focuses on non-mimetic dimensions of film, whereas moderate formalism studies the interaction of form with subject matter, examining the way form configures the subject matter. Each artist or school or period of art configures the subject matter differently – each is distinguishable according to its own mode of style, technique, and expression. A formal analysis identifies the intrinsic properties film possesses (in opposition to properties metaphorically attributed to film, such as 'depth', or 'sadness', or other attributes imposed upon it by the 'pathetic fallacy'). When a film's intrinsic formal properties are foregrounded, classical film theorists such as Rudolf Arnheim (1957) attribute to that film the value of 'art'. Whereas a strictly formal analysis only identifies the intrinsic properties of a film, both technological and stylistic analyses examine the filmmaking process, the knowledge imposed on the film medium. They emphasize the process of how a film was made, examining the activity itself

(the movement of the camera, the actor's performance) which is different from an intrinsic description of film form, and different from an interpretation.[9]

Vlada Petrić combines several categories in his textual analyses: moderate formalism, technology, and aesthetics, with an emphasis on *technê* and *praktikos*, which he calls 'cinematic strategy':

> Following Eisenstein's concept of the analytical procedure, students are encouraged to use a method which may lead them along 'the same road that the author (filmmaker) traveled in creating the image, and forming the integral unity of his work'. By discovering the 'creative road' through which the author 'travelled' in making his film, the analyst becomes capable of defining the cinematic strategy by which a film is conceived and realized. (Petrić 1976b: 453)

For Petrić, the film analyst is encouraged to travel in reverse along the same road that the filmmaker travelled in creating a film. This is not a mere description of film techniques but is a functional account of their use in a specific sequence of film; the procedure is thereby a type of reverse engineering, carried out via a textual analysis of film sequences. The analysis of film technique reveals the filmmaker's cinematic strategy – the cinematic knowledge and thinking (the cognitive capacity) behind the film, which guides the filmmaker's decision-making, problem-solving, and implementation of filmmaking knowledge.

Petrić analyses a seemingly inconsequential sequence of nine shots near the beginning of *The Rules of the Game* (Renoir, 1939): a confrontation between Geneviève (Mila Parély) and her lover Robert (Marcel Dalio) in Geneviève's salon. Petrić focuses on the way Renoir's choice of filmic techniques ('the duration of the single shot, the composition of the image, the distribution of light within the frame, the size of the shot, the pace of montage, the camera position, and, above all, its mobility' [1982: 264]) transforms the filmed events into a filmic sequence. After describing the sequence shot-by-shot, Petrić is able to identify Renoir's cinematic strategy, one that succeeds in combining the virtues of both editing and camera movement. The sequence begins and ends with tracking shots, which alter the composition, camera angle, and shot scale without the need to cut. The remaining seven shots are static, organized into a shot/reverse shot pattern as Robert and Geneviève confront each other. However, the angle and shot scale change each time the sequence returns to a character, for Renoir did not film the characters from the same angle and distance but altered both of these formal parameters as the sequence progresses. Renoir's strategy was therefore to present a

new view of each character as their confrontation unfolds: 'Alternating his set-ups between two characters who face each other, Renoir never repeats pictorial arrangements nor match-cuts his shots mechanically' (Petrić 1982: 275). Even though the individual shots within the shot/reverse shot sequence are static, overall they are dynamic because the composition changes in each shot, heightening the visual impact of the conflict between the two characters. Renoir therefore employs editing to imitate some of the benefits of the long take filmed with a moving camera – a constantly changing image track. Like all film sequences, this sequence embodies in its form the director's knowledge – Renoir's cinematic strategy (problems and decisions), and it is this strategy that Petrić reads from the shots. This type of analysis begins to unite filmmaking and film analysis, because these two types of film education focus on the same type of knowledge – theoretically-informed *technê*, but from opposite perspectives. Film analysis becomes a study of the *technê* and final cause that produced the film, which are embedded in the film's form.

As well as attempting to bridge the theory/practice gap by studying cinematic strategy, in the 1970s Petrić also proposed bridging the gap between film theory and film history via textual analysis. He recommended a 'Visual-Analytical' approach to film history, premised on the examination of films shot-by-shot. Petrić argued that film history should primarily be taught via the shot-by-shot analysis of key film sequences because he conceived film history as a history of successful and unsuccessful solutions to filmmaking problems. From this perspective, unsuccessful films are understood as works made by novices who possess insufficient knowledge to solve filmic problems, who do not know how to use the specific properties of the medium to solve problems and, significantly, do not even understand what filmic problems need to be solved in making a film. Conversely, accomplished films are successful solutions to filmmaking problems. To make the jump to the level of the expert, the novice filmmaker needs a detailed knowledge of film technology, form, style, and aesthetics needs to learn from the history of cinema the way previous filmmakers successfully solved filmmaking problems, and needs to know how the specific properties of film can be purposively used to solve filmmaking problems – problems of representation and storytelling, of character engagement, problems of expression, and problems of style and technique (especially establishing and following a set of intrinsic stylistic norms). In addition, filmmakers need to be able to draw upon first-person modal knowledge to judge whether their problem-solving is successful or not (whether the choices they make are appropriate). Solving filmmaking problems is not simply a technical skill but is an intellectual capacity supplemented with technical skill. Although Petrić advocated this

analytical approach to film history in the 1970s before copies of films were readily available for study, the problem persists today, for film history continues to be taught separately from film theory classes.

**Teaching film**

> If it *is* possible to describe the artistic process as a series of problems and their controlled resolution, the ensuing generalizations may be of no small consequence to the teaching of art. (David W. Ecker 1963: 284; emphasis in the original)

Claiming that know-how is propositional is to declare that it can be verbalized and therefore made explicit in various forms – in teaching, in interviews with experts, in professional manuals, and in film studies textbooks. For Aristotle, an integral part of *technê* is the ability to communicate the knowledge, to give a rational account of it (cf Dunne 250: 286). Yet, many filmmaking degree programmes implicitly endorse Gilbert Ryle's privileging of know-how (defined as *praktikos*) over know-that. Unanchored from propositional knowledge and how to use it to solve problems, filmmaking becomes an activity governed by chance and contingent events. It is quite common for filmmaking programmes to emphasize practice by proclaiming that 'Students get a camera in their hands day one'. But such statements reinforce the popular belief that filmmaking is not an intellectual activity involving knowledge, but is a physical activity guided only by the filmmaker's intuition.

This statement, 'Students get a camera in their hands day one', follows the traditional, common sense fallacy that limits knowledge to practical activity. Following Jason Stanley's re-reading of Gilbert Ryle, I argue that if a film school proclaims that they put cameras in students' hands on day one, this does not mean that the film school is teaching those students filmmaking. (Also, these days students can put a camera in their own hands, without the need to go to film school.) *What students need from film school is the knowledge behind filmmaking*, an *understanding* of the film medium and its technology and, most importantly, how to use that knowledge and understanding to solve filmmaking problems.

Teaching filmmaking therefore requires propositional input, not just practical input: the ability to teach film involves the verbal articulation of the propositional content manifest in the skilful intentional actions of filmmakers. (This verbal articulation is equally relevant to film studies students and to filmmaking students.) Simply making films during a filmmaking degree will not automatically turn one into an expert filmmaker. Students can spend those

years making the same unsuccessful films, and making the same mistakes, or only making incremental advances. This type of teaching promotes a form of imitation or rote learning, one that simply reproduces clichéd ways of filmmaking.

An expert knows many potential ways to perform an action, knows when to choose one option at the right time, and knows when and how to deviate from institutional norms. A filmmaker cannot make expert choices in constructing a shot or sequence simply by holding a camera in his or her hands. Nor can they make these choices by simply possessing technical competency or by mechanically following a series of steps. Expertise requires the filmmaker to take possession of a series of propositions that articulate the knowledge of filmmaking. Those propositions do not constitute passive, contemplative knowledge, but a deep knowledge of filmmaking as a problem-solving activity, knowledge of the options available to solve problems, and the competence to make a reasoned choice from those options.

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## Notes

[1] My reading of Aristotle is based on chapters 8 to 10 of Joseph Dunne's book *Back to the Rough Ground* (1993), and on Richard Parry, 'Episteme and Techne' (2014).

[2] For example, the cellist Jacqueline du Pré is renowned for her performance of Elgar's Cello Concerto in E Minor. From Stanley's intellectualist position, we can argue that she retained her unrivalled knowledge even when she suffered from multiple sclerosis and lacked the physical ability to perform the piece. Her knowledge was not simply in her physical performance, but in the series of propositions that constituted her know-how, propositions which she retained after contracting multiple sclerosis.

[3] George Lakoff (1987) is more radical. Like Jason Stanley, he links cognition to bodily action (and the environment), but he redefines cognition in terms of schemata, rather than propositions, and he places emphasis on the body and environment in determining the abstract mental schemata. But my aim here is not to establish the exact representation of knowledge in the mind (action-oriented propositions/schemata, etc.), but simply to point to its influence over practice.

[4] This sense of production/creation is also prevalent in the earlier structuralist models of language. Lévi-Strauss argued that creativity is an effect of the specific selection and combination of pre-existing codes and structures: '[Humans] never create absolutely: all they can do is to choose certain combinations from a repertory of ideas which it should be possible to reconstitute' (quoted in Miriam Glucksmann 1974: 89). The 'code user' (speaker, writer, filmmaker) therefore submits to the code, to its meanings and limits, but reconstitutes it (using rules of permutation and transformation) to create new meanings.

[5] Following Chomsky (1964), Umberto Eco (1976: 161; 1979: chapter 2) distinguishes between 'rule-governed' and 'rule-changing' creativity, in which the latter involves the invention of new codes and new rules of combination. He analyses metaphor as a form of 'rule-changing' creativity.

[6] This tension between the novice and expert filmmaker was played out in Eisenstein's seminars, as represented in *Lessons with Eisenstein*, based on the notes of one of his students, Vladimir Nizhny (1962).

[7] Thomas Nickles defines a problem as 'consist[ing] of *all* the conditions or *constraints* on the solution plus the demand that the solution (an object satisfying the constraints) be found' (1981: 109).

Constraints determine the problem and the range of admissible solutions; they constitute the limit conditions: 'The constraints characterize – in a sense 'describe' – the sought-for solution. Specific types of problems will, of course, possess special features' (109). The constraints characterize the sought-for solution: constraints rule out inadmissible solutions, thereby narrowing down the possible range of admissible solutions.

[8] The technical option to use a steadicam now exists, which can create rapid and fluid camera movements.

[9] When discussing textual analyses, we also need to consider the claims the analysis is making, the evidence (and the way it is presented), the theoretical assumptions that link the evidence to the claim, comprehensiveness of the analysis, and the degree of significance attached to the represented content.

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