

INTERNATIONAL JOURNAL OF FILM AND MEDIA ARTS (2020) Vol. 5, N° 2 pp. 49-64

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ijfma.ulusofona.pt

doi: 10.24140/ijfma.v5.n2.03

PEDAGOGICAL EXPERIMENT WITH PORTRAIT LIGHTING IN COMBINATION WITH DIFFERENT ACTOR'S INTENT IN THE CASE OF NOVICE ACTORS

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Paper submitted: 2nd February 2020

Accepted for publication: 26th September 2020

Published online: 13th November 2020

Abstract

Portrait lighting and acting both carry substantial weight in creating character engagement by the viewer, but are rarely researched in conjunction. At the same time both acting and portrait lighting have considerable canons that have developed within the craft system and realized through implementation of tacit knowledge in everyday practice. Thus, as both are fields with considerable amount of knowledge and skills, but not enough scientific research conducted yet, it makes sense that the first expansion of knowledge should be conducted through artistic research. In line with Root-Bernstein's ArtScience approach that calls for processes of invention and exploration (Root-Bernstein, 2011), the current study tested out a possible model for researching the interaction between portrait lighting and acting. The current article should be considered as an analytic report on the first interdisciplinary experiment that melded together cinematography, acting, portrait lighting and pedagogy, with research activities conducted with and by the participating students.

Keywords: portrait light in cinematography, acting for camera, film pedagogy.

Creative research

Creative research is hybrid in its nature. In a seminal paper about research in the fields of art and design Christopher Frayling criticized the two common stereotypes of artists and researchers, describing the typical view of the former as 'someone who works in an expressive form, rather than a cognitive one, and for whom the great project is an extension of personal development: autobiography rather than understanding' (Frayling, 1993, p. 1) and the latter as someone who "takes a problem, makes tentative conjectures, regarding the answer to it, and keeps revising the answer in the light of neat, well ordered experiments, which must be repeatable and replicable' (Frayling, 1993, p. 2). In current practice the different types of research through creation within experimental settings show a variegated landscape where different research activities exhibit multiple facets of the combination between practice and research. Krogh et al expound that while classical view of research regards 'drifting' as a failure, as a process too much in flux, in design, 'drifting' shows the ability to learn continuously from findings and make adjustments accordingly (Krogh et al, 2015). Based on inductive analysis of 10 exemplary and well-cited PhD theses developed in environments emphasizing artistic quality Krogh et al delineated a typology of five forms of design methodologies and labelled them as *accumulative, comparative, serial, expansive* and *probing* (*ibid.*). Each of these five forms exhibit 'process-loops where hypothesis, experiments, and insights concurrently affect one another and result in a drift of research focus and continued adjustment of experiments to stabilize the research endeavour' (Krogh et al, 2015, p. 1). It becomes evident that what is called *creative research*, or *artistic research* or *research through practice*, or *research through design* is a field of activities that does not encompass the full rigor-ousness of classical scientific approach, but at the same time includes more reflection and meta-analysis than just pure practice itself. Pia Tikka calls for '*adopting research-based practice as a reciprocally complementary methodological approach to the established practice-based research widely promoted in*

European art universities today' (Tikka, 2011, p. 18). Stressing, that research-based practice is different from practice-based research, Tikka expounds that '*in research-based practice theoretical research precedes practice, and the acquired new understanding inspires practical work. Practice requires the expertise of filmmaking: a craftsman's skills learned by doing.*' (*ibidem*). This approach stresses the need to incorporate skills acquired through practice into the research activities.

In the field of film cinematography, practice-based research is not too common within academic setting, but the work itself is intertwined with constant research and putting the research results into practice. Cathy Greenhalgh refers to professional jargon of a cinematographer '*Having an eye*', which in Greenhalgh's interpretation '*involves both explicit and tacit knowledge*', where film, photography and painting histories have created specific rules, habits and procedures (Greenhalgh, 2018, p. 204). With these notions in mind, it becomes evident that creative research activities in the field of cinema should include tacit knowledge and practices to employ the vast pool of expertise that has not yet been transferred into the field of science. These knowledge transfer activities should make tacit knowledge explicit while creating experimental settings which resemble filmmaking, but at the same time allow to selectively separate different fields of filmmaking to give the research aspect a strong enough focus. In addition, the setting should allow for collaborative practice, as Alony et al summarize in their study of tacit knowledge sharing in the Australian Film Industry: '*collaboration is a form of knowledge sharing*' (Alony et al, 2007, p. 56). For the current study, two different fields within filmmaking were chosen to enable a space for a case study. The setting that was tested was for a possible creative research-based experiment on bringing together tacit knowledge and professional skills from two fields of filmmaking. These two fields, that are inherently intertwined but often mistakenly considered far apart, are acting and cinematography. To design an experiment for these two fields, a narrower focus was chosen on something that has even stronger overlap between the two: human face.

Portrait lighting

Human face in cinematography is strongly connected to portrait lighting since the way a face is lit can render very different results both in the appearance, recognizability and also emotional appeal. Portrait lighting in film is a vastly under-researched area. Some research has covered how lighting affects facial recognition and matching (Hill, Bruce 1996), sensitivity to changes in illumination, as well as viewpoint and facial expression (Adini *et al*, 1998) and whether face recognition is sensitive to illumination direction and if cast shadows improve performance (Braje *et al*, 1998), but most of the contemporary research is focused on face recognition. At the same time in filmmaking, in addition to creating character familiarity, portrait light also renders substantial emotional psychological effects on the viewer. Although there is a lack of empirical research on how portrait light affects viewer-felt affect towards onscreen characters, cinematographer's tacit knowledge lends itself for creative use of portrait lighting for affecting sense of space (Lotman, 2016), or familiarity (Lotman *et al*, 2019). Recently, new research has emerged on the effects of brightness levels and key-to-fill ratio on the recognition of emotion, emotion intensity, and the overall appeal, as these are crucial factors for audience engagement (Wisessing, 2020).

Greenhalgh's theorizing of cinematography's rules, habits and procedures (Greenhalgh, 2018), can be used to categorise portrait lighting styles that are known both in portrait photography and cinematography. These portrait lighting styles are part of the professional jargon and skill, they have neither been standardized by some professional body nor researched within the scientific frame, yet they exist and permeate among cinematographers and photographers. The names of the styles usually refer to the position of the key light, the lighting that provides the main illumination in the shot, bringing out different facial features and its shape. "Butterfly" (also known as "Paramount" due to its historical use during Hollywood golden era studio productions) refers to lighting created

by positioning the key light directly in front of the face, with a 45-degree downward angle, forming a small nose shadow and eponymous butterfly shape on the cheekbones. With "loop" lighting the height of the key light remains at a 45-degree downward angle but is moved so that it points diagonally in relation to the face, forming a small nose shadow that is pointing to the mouth's outer corner. With "Rembrandt" lighting the key light remains at a 45-degree downward angle, but moves even more to the side than in the case of "loop", creating a small light triangle on the cheekbone under one eye, while the rest of that side of the face falls into shadow (the jargon name of this lighting style bears witness to the deep-rootedness of portrait lighting in the history of painting). With "split" lighting the key light is positioned on the subject's side so that one side is evenly lit and the other side is fully in shadow, the edge between the shadow and light running through the exact centre of the face. "Kickers" refers to jargon for two backlights, lighting both sides of the subject's face (backlight is a light source that is pointed at the subject from an opposite side to the camera angle, "kicker" is one style of backlighting, that hits the subject from an angle that touches some of the front side as well, unlike another backlighting style known as "rim light", that creates an illuminated rim around the subject but hitting it directly from the opposite side of the camera angle). "Short light" (also known as "far side key") refers to the positioning of the key light on the opposite side of the camera in relation to the subject's angle of view, illuminating a smaller portion of the face, but bringing out more characteristic shape and form of the specific face. "Broad light" (also known as "near side key") refers to placing the key light on the same side of the subject's angle of view as camera, rendering a flatter image and illuminating a larger portion of the face. Lighting styles "loop" and "Rembrandt" can belong either to the sub-category of "short light" or "broad light", depending on the position of the camera and light in relation to the subject's angle of view.

In addition to the key light position, the overall illumination on the face can affect how strong an emotion the image can

elicit on the viewer. Lighting styles that differ markedly from the more natural aforementioned light directions can be considered on the marked-unmarked dichotomy. The terms “marked” and “unmarked” in Juri Lotman’s theorizing of cinema semiotics, refer to a choice that is differing on purpose (markedness) from, or adhering to (unmarkedness), the norm values of the given cultural context (Lotman, 2004). One of the examples Juri Lotman uses in *Semiotics of Cinema* is the height of the camera in relation to human subject: eye-level position is unmarked, as it adheres to the normal perception, and low-angle position is marked as it differs from it (*ibid.*). Within this dichotomy aforementioned portrait lighting styles (mostly 45-degree angle downward lighting) would belong to an unmarked category, since humans are accustomed to light coming from this angle. The marked category in portrait lighting would be lighting styles that create a specific shadow pattern that makes the face stand out somehow. Sampsa Huttunen has summarized the tacit knowledge in terms of this style of lighting as: ‘*Lighting from below (for “bad guys” and especially in horror films). Lighting that hides the eyes (and “thoughts”) (Godfather etc.) Lighting that makes the target look ominous and/or ambiguous in any way.*’ (Huttunen, 2019, para. 4). In an interesting pilot study, Huttunen looked at the autonomic nervous system (ANS) reactions to faces lit in a certain way and hypothesized that lighting from below or lighting that hides the person’s eyes would create stronger ANS response than other types of portrait lighting. Preliminary results presented on The Society for Cognitive Studies of the Moving Image (SCSMI) 2019 conference in Hamburg showed an ANS response to face that was lit from below and face that was left in complete silhouette (only background lighting that showed the outside shape of the person’s head), indicating that there is indeed differentiation in the way people perceive differently lit faces (Huttunen, 2019).

In terms of the portrait light and its relation to the subject that is being lit, a fitting parallel can be found in Michel Chion’s theorizing of value added to images by music. Chion divides ways for music in film to elicit emotion in relation to

the situation as having empathetic and anempathetic effect. The former refers to music that is congruent with the scene, or as Chion describes it – in harmony with the tone of the scene – and the latter refers to music that juxtaposes with the scene because it exhibits indifference towards the events depicted on the screen (Chion, 2019). Similar relationship can also be observed between possibilities of using portrait light that is either congruent or non-congruent with the events that take place on the screen. One could hypothesize that there should be a difference in viewer’s perception towards the character whether the actor acting a friendly character is lit with ominous light or *vice versa* – character who is dangerous or antagonistic is lit in a romanticized light. The incongruence of character’s emotions and portrait lighting has been put in use throughout film history for decades, for example, in lighting characters Ilsa and Rick in *Casablanca* (Smith, 2006) and congruence, as in aforementioned “*Godfather*”, where Marlon Brando’s ominous character’s eyes were left into shadow, just to name a few most famous examples. These relationships between what is acted and how it is lit are hard to trace on films because the tasks given by the directors to the actors are rarely recorded in film history.

Acting

In addition to lighting, acting carries a large load of the face induced effect on the audience. Similarly to portrait lighting, film-specific acting practice is also sufficiently understudied. Different screen performance studies have looked into phenomenology of a dynamic system between actor and spectator (Sternagel, 2015), stardom (McDonald, 2015), understanding screen acting from the perspective of mirror neurons (Brown, 2015) or intentionality and performance as a social and rhetorical event (Drake, 2006), but the first-hand experience of acting practice in film needs more systematic reflection. The lack of research in this area is acknowledged also by the researchers themselves – in conclusion, Drake asserts that the study of screen performance has a great deal yet to offer (*ibidem*).

These two sides of character engagement – actor’s work and the way actor’s face are portrayed while performing the work – are strongly interconnected and while conducting research on character engagement in film should be viewed on par. As both strands of facial affect – the effect of portrait lighting and screen acting methodology are understudied, it is evident that the combination of both remains a largely untrodden wilderness.

Tacit practices within the fields of acting and portrait lighting

While methodological scientific research on both topics is scarce, at the same time there is ample practice that is happening on almost every film, since each of them features both acting and portrait lighting. Film acting praxis and directing film acting praxis have multiple schools and methods that have developed during the history of filmmaking (and theatre). The naturalistic acting tends to centre around Konstantin Stanislavski’s method, the most influential acting “system” of the twentieth century on which almost all other practical approaches to the craft of acting have been based, among them celebrated acting schools as the Group Theatre (Lee Strasberg, Elia Kazan, Stella Adler and Sanford Meisner) that have shaped acting in film (Goritsas, 2016). One of the most practical and feasible approaches designed for practising and teaching tacit knowledge about acting is Judith Weston’s method (Weston, 1999). One of the central concepts in Weston’s method is aiming for *process-oriented directing* as opposed to *result-oriented directing*. Process-oriented directing focuses on moment-by-moment work that is created from the subtext of what is happening in the scene between the characters. Weston expounds that *‘in order for the thoughts and feelings of the characters to be transparent to the camera, the actors must be in the moment. In order for the dialogue to come alive, the subtext of the dialogue must be louder than the text itself’* (Weston, n.d., para. 2). One of the apparent strengths of Judith Weston’s method, especially in the

context of film schools, is its practical applicability within the setting of novice actors. In Tallinn University Baltic Film, Media, Arts and Communication School multiple short courses inspired by Judith Weston’s method were conducted during the 2018-2019 school year within both BA and MA levels with students from specializations ranging from editing, sound, cinematography to directing and the method proved to be very effective. The fact that first-year technical specialization BA students were able to perform complex psychological scenes with long dialogue in front of a room full of people, bears witness to Judith Weston’s method’s effectiveness, especially because the technical specializations’ students are usually admitted to BA courses based on their more technical skills and interests and Weston’s process-oriented tools for acting and teaching acting have been instrumental for them in creating live performances both to camera and audience.

Another important notion in Judith Weston’s method is the analysis of subtext. The subtext is one of the tools central not only in screen acting, but also in scriptwriting and directing. Karl Iglesias explains that *‘the subtext comes from the action, not the dialogue. This is why we say actions speak louder than words.’* (Iglesias, 2010, p. 214), a similar idea is expressed by Robert McKee: *‘The scene is not about what the scene seems to be about. It’s about something else. And it’s that something else [...] that will make the scene work. There’s always a subtext, an inner life that contrasts with [...] the text’* (McKee, 1997, p. 255). The importance of subtext in the screen acting practice lies within the fact that the implicit, not explicit meaning is communicated through understanding and acting the subtext. Another reason why understanding and practising the skill to detect and play the subtext (or in directors’ case, indicate and word the subtext in a playable way for the actor) is important is that the genuine or false acting is discernible to the audience (in a conscious or subconscious way), so false displays of emotion are only appropriate, if they happen, within the fictional narrative setting (Kemp, 2012, p. 31). In order to understand if the fictional setting calls for false display of

emotion, one needs to be able to detect the subtext – the source and reason why both real humans and fictional characters display emotions that are incongruent with the words they say. Thus, tools for uncovering the subtext – what comprises Judith Weston’s term ‘detective work’ – and then playing the subtext are central to effective directing and acting practice. The moment-by-moment play of subtext is what gives screen acting its naturalness and flow and what also makes it, through specific tools, a good ground for creative research and experimentation.

Close-up lighting in film has been influenced by the practices of still photography that transformed while making the transition to film (Keating, 2006), by the tacit knowledge of generations of cinematographers (Lotman, 2016) and by the demands of the industrial system of stardom (Lotman *et al*, 2020). Both, acting and portrait lighting have considerable canons that have developed within the craft system, taught to the next generations during workshops, apprenticeships and through craft literature. Thus, as both are fields with a considerable amount of knowledge and skills, but not enough scientific research conducted yet, it makes sense that the first expansion of knowledge should be conducted through artistic research. In line with Root-Bernstein’s ArtScience approach that calls for processes of invention and exploration (Root-Bernstein, 2011), the current study tested out a possible model for researching the interaction between portrait lighting and acting. The current article should be considered as an analytic report on the first interdisciplinary experiment that melded together cinematography, acting, portrait lighting and pedagogy.

The pedagogical aspect of teaching film practice

The third aspect of the experiment, the pedagogical aspect sets another unique set of challenges. While there is ample science about different pedagogical issues available, teaching

film practice is again a unique field. One of the big challenges of film schools is how to incorporate these aforementioned professional tacit skills into teaching through involving film professionals into film school teaching, who, while skilled as filmmakers, often lack teaching skills. Although film schools sometimes issue some guidelines for incoming teachers, practices need to be collected for the future development of learning experience (Ross, 2004). The uniqueness of small groups, a lot of practical exercises and not too much theory in film schools comparing to classical academic teaching calls for a special approach to pedagogy. ‘*Testing and practice-based reflection are key*’, as is noted by Vinca Wiedemann, former head of Danish Film School (Wiedemann, p. 21) in her reflection about the teaching and learning practices in DFS. Rod Stoneman and Duncan Petrie stress the potential of innovation for teaching institutions and call ‘*to explore new ways in which theory can return to interact with practice in new hybrid forms of research in film and the other arts.*’ (Petrie, Stoneman, 2014, p. 289). Thus, teaching film practice needs a framework that allows for experimentation, but simultaneous tutoring – enough freedom combined with a strong supporting framework. The supporting framework can be realized in the form of constraints that help participants maintain focus and flow during the creative experimentation process (Philipsen, 2009) that otherwise could become too chaotic. Kolb’s experiential learning theory has been considered in some accounts as suitable for teaching filmmaking practice, for example in teaching theory and practice of documentary film production where both course design and teaching methods can be inspired by it (de Yong, 2014) or considered a good parallel that can be likened to film production process (Barnwell, 2018, p. 30). Based on Kolb experiential learning theory the workshop setting of the experiment reported in this article was comprised of cycles of practice/experience, reflective observation and subsequent active testing of the new knowledge by putting it directly into practice. The course design described below followed the path of tutorial, feedback (but not classical assessing feedback from tutors, but reflective feedback from

the participants that was aided by active questioning from the tutors) and subsequent practice. One of the goals of this pedagogical approach was a speedy skill transfer due to the fact that the learners were novice in acting.

Teaching and creating character engagement

The three aforementioned aspects – how characters are played, how characters are portrayed and how this is taught – can be considered one of the central questions for future film education. Daniel Jerónimo Tobón stresses the importance of the experience of character engagement to the narrative appeal of fiction films, as it has:

[...] major relevance for the theory of narrative cinema. It conditions how characters are designed and how actors portray them, as well as the cinematographic, narrative and emotional structure of films. The ability to bring forth this kind of engagement is one of the most common criteria in judging the success of a movie [...]. (Tobón, 2019, p. 1).

Character engagement, while also dependent of narrative comprehension and understanding of the character's psyche, is tied closely to one of the unique facets of film's artistic form, which Bela Balasz has called '*film's true terrain*' - the close-up shot (Balázs, 2010, p. 38). Balasz stressed that when viewers look at the isolated and enlarged human face, they lose awareness of the surrounding space (*ibid.*). Contemporary neurocinematic research has connected the activity in the cortical region specialized on face processing, the fusiform face area, to the viewing and experiencing close-ups in film (Hasson *et al* 2004). Cognitive film theorist Carl Plantinga describes '*scenes of empathy*' where close-up is used so that '*the interior emotional experience of a favoured character becomes the locus of attention*' (Plantinga, 1999, p. 239). Emotion affect of faces in film has been connected to emotion contagion (Coplan, 2006) and facial mimicry and it

has been proposed that high-contrast lighting can serve as an effective means for influencing film viewers' empathic reactions through the low road to empathy (Voodla *et al*, 2020). The importance that human face carries in film affect makes it a fruitful and needed research object, but in order to be able to give the future filmmakers tools for creation filmic affect through portraying faces, research alone is not enough. Artistic research with and by the students that allows for creative experimentation is imperative.

The current study aims to set forth the very first steps of artistic research that combine tacit knowledge from two fields of filmmaking praxis – portrait lighting and naturalistic film acting – with the aim of laying the ground for future studies in the field.

The report - Method

As the goal of the current study was to create a space from where to learn about possible avenues for further more specific research, the main research method was observing and recording all the processes that took place and latter reflection during the discussions with the participants.

The study participants were a group of international MA cinematography students, from different countries (*Philippines, Kazakhstan, Finland, Argentine, Peru, Germany, Taiwan, Turkey, Brazil, India, Ecuador, Latvia*) and three tutors (from Estonia and Finland). During the workshop the students received one workweek (5 full days) training course on basic method acting based on Judith Weston's method, introducing them through practical exercises and lectures to the main actors' tools, including the tool known as 'action verb' (sometimes referred to as 'active verb'), that was planned to be the central tool for conducting the practical experimental part. Most of the students did not have prior in-depth acting schooling or practice. The workshop was based mainly around Judith Weston's method of directing actors but the introductory part

also included exercises from Sanford Meisner and other well-known acting teachers.

During the workshop, the students worked both individually as well as with a partner and in three-person groups (20 people = 6 x 3 + 1 x 4 groups). The workshop included separate exercises for warming up, vocal exercises, specific topic exercises (for example status exercises). The workshop was led and practical exercises supported by three tutors: one acting teacher (who had passed multiple Judith Weston courses and individual teachings and had taught Judith Weston's method over the years in different film schools and training courses), one practising cinematographer (and cinematography teacher) and one practising director.

The first day of the workshop was centred around the basis of acting – connection – and was built upon individual monologues. The monologues were chosen from different well-written performance texts, mainly from films and theatre, but chosen so that the participants would likely not be acquainted with the text previously. The monologues were firstly read with partners and tutoring focused on different ways of making a connection between the partners. Then an analysis session of the monologues was conducted, focusing on the facts and events behind the text. During the exercise, learning the lines happened simultaneously, until the participants were able to let go of the text and start improvising the monologue (the texts were not distributed to the participants beforehand). Subsequently, the concept of action verb was introduced to the participants and the realization of the action verb was practised through sets of exercises. The monologue exercises of each participant performing were filmed and lit by other participants.

The instruction continued during the next days with screening of the monologue exercises with the action verbs and subsequent discussions. Later, dialogue exercises were added and with them guided rehearsals. Judith Weston's script analysis

was done, using the materials published in her publications. The dialogues for work were also chosen from films, that were from the 20th century, not very recent cinema releases, but films that were successful in their own time.

The last day focused on screening the filmed scenes and screening the clips from the actual films that the monologues were taken from. The goal of the viewing to the original film scene with professional actors was (in addition to showing different interpretations of the same text) also to open the participants eyes to the tools that actors use in practice, so that they can, after experiencing it first-hand themselves and seeing others practising it, become aware of the mechanics of acting. The group was responsive and focused, considering that for many of the students it was a very first experience with acting and although as cinematography students they had prior exposure to acting, most of them had never acted before themselves. An analysis and feedback session ensued the viewing, with the goal that the participants could reflect on their budding acting skills and how they can put these skills into practice as future cinematographers. BM Sergi has inferred in his creative PhD work on directing actors that *'knowing and assessing the actors' performance is a complex higher level function that relies heavily upon tacit knowledge, embodied knowledge, acute perception, empathetic projection and emotional experience in distinguishing authentic complex human behaviour'* (Sergi, 2012, para. 1). For a cinematographer, the ability to perform this higher-level function is an important skill that can be honed through acting practice.

After 5 days of acting teaching and practice, the students received a basic introduction to portrait lighting. The introduction was shorter than acting introduction session as they were cinematography students and had already received lighting teaching throughout their studies. The portrait lighting introduction covered the most commonly known portrait lighting types (afore-described, known in professional jargon

as “loop”, “butterfly”, “rembrandt”, “split” and “kickers”) and two ways of lighting a portrait in relation to the camera, subject and light placement, known as so-called “broad light” and “short light” (also known as “near side key” and “far side key”). As expounded earlier, the relationships between what is acted and how it is lit are hard to trace, thus the experimental setting of our study of different lighting conditions in combination with different actor’s intent (manifested through the use of action verb), was designed to explore these relationships, present throughout film history through tacit knowledge, and to research possible ways to make these relationships explicit (both to the participants themselves and also to possible viewer-learners and researchers).

After the introduction to portrait lighting the students were instructed to conduct a practical exercise that combined the previously learned acting and portrait lighting skills. The class formed 4 groups and shot 3 different (one group shot 4) versions of the same monologue acted by the same student in different lighting conditions.

The students received instructions to shoot the exercises using three different combinations of portrait lighting and acting verb behind the acted monologue. The exact acting verbs were left for the students to choose themselves. Each group had one student performing as an actor, one as a director and one as a cinematographer.

First one was instructed to have a harmonious relationship between lighting, action verb used for acting and the content of the monologue. This meant that the emotion of the monologue should be played with an action verb that corresponds to the content of the monologue (is congruent with it) and should be lit in a way that the lighting corresponds to the mood of both monologue and action verb (is congruent with it).

Second one was instructed to feature a contrasting relationship: action verb used in acting that would be in contrast with

the portrait lighting (non-congruent with it) and in harmony with the content/mood/emotion of the monologue.

Third one was instructed to feature another combination of a contrasting relationship: lighting in contrast with the monologue (non-congruent with it). In this case the choice of action verb for acting the scene was left open to be either in contrast or in harmony (one group that shot 4 versions tried out both of the latter).

The students were also instructed to make two versions – with explanatory title credits and without, so that the first screening the students from the other groups who did not have knowledge of which combination they are watching could write down or memorize their first impressions and later see the same shot with explanation and compare it with their first impression.

Students had a day and a half to conduct the exercises and the screening of the clips was scheduled on noon the next day.

For the experiment, the focal lengths were approximately matched and backgrounds were chosen neutral dark to minimize other elements that could affect the results, because the way human face is portrayed in the film can also be affected by the focal length of the lens (wide lenses can create substantial distortion and long lenses flatten the face, thus medium lens was chosen to minimize the lens effect), by the background colour and detail (background-object separation has a substantial effect on depth perception), shot size (Kovács *et al*, 2019) and by other elements.

The equipment used for the exercise was standard HD digital video cameras and small lighting setup that comprised of temperature balanced (5600 Kelvin) cinema lighting fixtures (Kino-Flo 4-bank lamps and HMI fixtures) and during the filming, the white colour was balanced for lights to omit strong colours that could also add an additional layer to the lighting effect.

The results were viewed in a 160 m²; 13,5×11,85×6,5 m room, participants were seated in one side of the room and they watched the clips from a 4,0×2,4 m sized screen that was positioned in the other side of the room. The lights were dimmed, not completely dark so that the participants could take notes during the viewing.

The clips were first played without explanatory title credits and then with explanation.

After each viewing, a free form discussion ensued which was led by the cinematography instructor. During the discussion, the participants used the notes that they had been writing during the viewing. The discussions were recorded with the participant's written permissions. The instructor participated in the viewing, discussion and subsequent note-taking, so the study can be considered similar to an interpretative phenomenological analysis (IPA) with a focus group (Palmer et al 2010). Since the goal of the experiment was to test a possible experimental setting, not interpret the collected data, the data of the discussions was not coded, but rather observed in terms of helping to develop practical applications of the method in future.

Results and discussion

The participating students found the exercises interesting and engaging and although they did not guess exactly each of the combination they were viewing (without explaining title credits), the overall reaction was that the contrasting combinations elicited stronger emotions.

Since the study was conducted as a very first artistic research experiment in the field, neither the students nor the instructor expected very clear-cut results. One of the goals of the experiment was to see how this kind of model could be further elaborated and adjusted for a more specific future research.

Based on the first experiment, the results from discussions with the participants indicate the following outcomes:

- 1) It is possible to give a basic understanding of the term "action verb" to novice actors through practice and tutoring during a 5-day workshop in a way that they are able to act independently in front of the camera with a given monologue and vary between different action verbs.
- 2) Portrait lighting and different action verbs in combination with different monologues' emotional contents are a fruitful ground for experimentation. In further studies, it might be productive to give specific pre-chosen action verbs to each group or have a tutor follow the group during the filming of the exercise to make sure everyone understands the exercise the same way.
- 3) Trying out different action verbs in order to understand how the tool works in creating different nuanced screen performances and subsequent viewing of the same text performed with different verbs (during the process of learning about action verbs) is a very useful and rapid way of demonstrating the effectiveness of this tool.
- 4) During the process of learning action verbs, subsequent viewing of recorded videos of different takes with different verbs is more useful in understanding the on-screen effect than just viewing live performance of the same takes.
- 5) Monologues with absolutely minimal added context (about character, costume, setting, era, story, room or props) are enough to elicit emotional reactions in the viewers, especially in the case of contrasting action verb-lighting-monologue content combinations.
- 6) Participant's feedback indicated that teaching acting to cinematographers is a very useful approach in helping them to learn how to analyze the screenplays they are working with as cinematographers. It was also found useful in choosing the portrait lighting and understanding the subtext under the character lines.

- 7) The workshop setting has to be very safe and trusting space, within a small group and skilled acting teacher, since for novice actors it is a very big leap to start acting in front of the camera. In a similar setting, at least two tutors are advisable.
- 8) Cultural differences and inter-group relationships need to be taken in account during the planning and preparation of similar workshop settings. This does not mean that the cultural differences hinder progress, but rather, when acknowledged and included in the discussion, can broaden the learning value to all participants, both practitioners and students included.
- 9) Although the focal lengths of the lenses and backgrounds were approximately matched, for a better comparison they should be matched exactly and also shot size and subject's distance with the camera and background should be matched.

In conclusion, the first experiment gave valuable information for further interdisciplinary artistic studies about acting and portrait lighting. Not least importantly the experiment also resulted in a better understanding of pedagogical settings and possibilities of a practising participatory workshop, where the participants conduct their own artistic research together with the tutor. The approach can be fruitful for both the participants themselves, but also, once the workshop format is more developed based on the first experience, it could evolve into a more scientifically rigorous research about how acting affects the viewer in combination with portrait lighting. The participants of the workshop, even if not using the gained knowledge for further scientific research, will put it into practice in their own work as cinematographers and will use the methods they learned in a trans-disciplinary way, bringing them a better understanding of the screenplay and actors.

The importance of research into cinematography and other filmmaking practices and the implications of it for the broader field of cinema

As shown in the aforementioned lacks of classical research into cinematography, acting and film pedagogy and its juxtaposition with ample practice in everyday work in those fields, there are substantial bridges that should be crossed through interdisciplinary activities to make the tacit/implicit knowledge explicit. There is a lot to gain. As more and more processes become automatized and while Hollywood (place where market forces drive the technical innovation of film industry) reaches out to AI to predict market success (Vincent, 2020) and different innovators experiment with long short-term memory (LSTM) artificial neural networks to create screenplays (Newitz, 2016), the human aspect of filmmaking needs to be brought to light both for the current film industry and future filmmakers. Classical tacit knowledge that is not worded by generations of filmmakers can be transitioned from implicit to explicit through experimentation, pedagogy and reflection. *Vice versa*, the processes of creation can be innovated when their mechanics are researched, described and tested in different experimental settings. Cinematography, traditionally considered a technical specialization, needs to evolve and change as the film industry is evolving. The future generations of filmmakers will continue to push the boundaries of creation, but in order to maintain creative control, the tacit knowledge of preceding generations of filmmakers needs to be made explicit and easily experiment-able. As artistic research in its nature and processes is very close to the type of experimentation that filmmakers do during different film development phases on a daily basis, the setting is familiar and easily adoptable. To add reflection, meta-analysis and knowledge sharing to make the resulting ideas and skills explicit, is something that the filmmakers can and should learn, and there is no better place to do it than film schools using artistic research.

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