



CLINICAL OBSERVATION: MOVEMENT QUALITY AND CLASSICAL ART

Greek sculpture as a tool in understanding the phenomenon of movement quality

Liv H. Skjaerven^{a,*}, Gunvor Gård^b, Kjell Kristoffersen^c

^a*Institute of Postgraduate Courses, Faculty of Health and Social Sciences, Bergen University College, Møllendalsvei 6, 5009 Bergen, Norway*

^b*Department of Physical Therapy, Lund University, Lasarettsgatan 7, 221 85 Lund, Sweden*

^c*Department of Public Health and Primary Health Care Section of Nursing Science, University of Bergen, Bergen, Norway*

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Abstract Previous research has shown that movement quality may be described as offering a general impression of a whole unified person, understood as a relation between postural stability, free breathing and awareness, which combined produce a refinement of movement as well as enhancing well-being. The phenomenon could further be structured in terms of four movement dimensions: structural, physiological, psychological/relational and a purely human dimension. So far we have little knowledge about these dimensions. The aim of this study is to deepen the understanding of the phenomenon of movement quality through close observation of Greek sculpture, reflection and literature studies relating to Greek sculpture. The aim was to see if these methods could be a tool for achievement of a deeper understanding of movement quality, in clinical observation and reasoning. A phenomenological method was used to study the essence of the phenomenon of movement quality. A study of Greek sculpture was chosen because of the way ancient Greek sculptors sought to express several dimensions of human existence. The results show that close observation, reflection and literature studies of Greek sculptures deepened the knowledge of the four dimensions of movement quality and provided a way in which this knowledge could be expressed in words. These methods may represent a tool for achieving a deeper understanding of movement quality in clinical observation and reasoning.

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Introduction

Can observation, reflection and literature studies of Greek sculpture be a tool to a deeper under-

standing of movement quality and can it be a tool in clinical practice? Movement quality is a general impression of a whole unified person and can be seen as a relation between postural stability, free breathing and awareness, which when combined contribute to a refinement of movement, as well as enhancing well-being (Skjaerven, 2003). Research show that the study of Fine Art offers unique

*Corresponding author. Tel.: +47-55-58-56-89; fax: +47-55-90-00-11.

E-mail address: liv.skjaerven@hib.no (L.H. Skjaerven).

opportunities to understand human movement, but there is no research on the phenomenon of movement quality.

Fine Art has been described as an expression of true feeling and form (Langer, 1953). Artists have many possibilities when seeking to visualize the human body in motion. Around 3500 years ago the Minoan people of the Mediterranean made beautiful "action sculptures" (Davidson, 1993). The artists of the time sought to express their experience of movement and many of their frescoes show great vitality and life. In Fine Art movement quality can be seen from two points of views, namely expression and movement. These terms have been used to refer to the properties of artworks that convey qualities beyond those that are physically present and immediately visible. In the art of sculpture, movement is defined as an effect of illusion of motion (Morris, 1975). As we know the sculpture is not alive. It represents the quality of the sculptor and his ability to create an impression of movement, expressed in the sculpture as an illusion of motion. In this context expression can be defined as an outward manifestation of an inner mood or disposition, which implies the ability of a picture or sculpture to communicate, indicate or embody something (Morris, 1975). This is rooted in the sculptor's own sense of movement, of an awareness of space, time and energy, and how this can be expressed.

In our own age and culture, we still seem to be drawn to Greek sculpture (Heidegger, 1978; May, 1975). The Greek people were skilful in their own movements and good observers of human movement (Charbonneau et al., 1972). Greek sculptors studied their own bodies and minds in order to discover and develop the qualities they embodied in their works. The sculptor transformed ordinary human experience in infinitely varied ways (May, 1975). Greek sculpture owed much to the stadium, where athletes traditionally competed in the nude (Charbonneau et al., 1972). The Olympic games included long and short-distance foot races, wrestling, discus and javelin throwing, horse and chariot races, thus making it possible to become aware very basic coordination in human movement. Athletics had a constant influence on the choice and development of forms in Greek sculpture, which generally expressed the healthy, vigorous man (Charbonneau et al., 1972). Greek sculptures offer an opportunity to experience the very centre of being in the body (May, 1975).

Greek sculptures of the Classical (ca. 480–330 BC) (Charbonneau et al., 1972) and Hellenistic periods (ca. 330–30 BC) (Charbonneau et al., 1970) express corporeal, mental, and aspects of

inner qualities, in physical form. During the Hellenistic period sculptures became dynamic compositions, expressive of life, flow and rhythm (Laisnè, 1995). Their art explores not only universal and aesthetic questions, but also matters of health and functional being. Their sculptures are true masterpieces, combining analytic precision with a deep awareness and sensitivity that render subtle elements of human balance and movement visible. They are characterized by physical beauty and harmony (Laisnè, 1995).

The French sculptor Auguste Rodin (1840–1917) was attracted to Greek sculpture and derived pleasure from studying them in order to refine his own work of expressing universal human movement characteristics, as well as personal traits in sculptures and drawings (Jarrassè, 1995). He also studied the dance of Isadora Duncan and Cambodian dancers. Rodin was obsessed with human movement, and sought to add life to the ever frozen stone (Jarrassè, 1995). He expressed a synthesis of the great epochs of sculpture and inaugurated new techniques of composition and expression. Through his mastery of the art of modelling, he was able to express the intensity of his passion for movement through his own forms. A fragment from his hands could hold more meaning, feeling and essence in the art of movement than that of any of his contemporaries. He always took immense pleasure in modelling life and rhythmical, unified curves in movement: "*Statues do not move. One must feel, that they can move*" (Jarrassè, 1995, p. 9).

The philosophers Heidegger and Løgstrup have been important contributors in the search for the essence of Fine Art. The most important aspect of art is its function as a door-opener for self-recognition and self-reflection (Heidegger, 1996). Artistic language can express truths and provide a perspective on the knowledge we derive from our senses. It can surprise us and help us to see elements and dimensions of which we were previously unaware. The primary essence of Fine Art is recognition (Løgstrup, 1995). The words of spoken language are not always able to embrace our sensory world. Art sheds light on elements and dimensions that we might overlook in clinical work, phenomena that are beyond cultural character.

Movement quality

During the past decade, physiotherapists have extended their field of action, as well as their knowledge of balance and movement (Önell, 1999). Physiotherapy is generating knowledge about the

Validation was achieved by comparing the results achieved, in each dimension, relative to observation of the sculptures, and the literature, to ensure credibility, plausibility and trustworthiness (Kvale, 1989).

Results

The results showed that each sculpture gave a general impression of high movement quality. Close observation, reflection and literature study of Greek sculpture showed that movement quality can be described in four dimensions, a structural, a physiological, a psychosocial/relational, and a purely human dimension. These dimensions can be used as a frame to deeper understanding of the phenomenon. The results also showed that observation, reflection and literature studies of Greek sculpture can be a tool to a deeper understanding of movement quality, in clinical observation and reasoning.

Dimension 1—a structural aspect of movement

Approaching the study of Greek art from a structural perspective unveiled a principal awareness of shape and line in the sculptures of the early period (Charbonneau et al., 1972). The sculptors of the time were no strangers to anatomy. At an early stage the Greeks began to concern themselves with the movements of the torso (Laisnè, 1995). Our study recognized the three basic coordinations in the trunk (1) flexion and extension of the trunk, (2) turning around the vertical axis and (3) torsion and counter-torsion between chest and the pelvic region. One can point out a variety of movements that originate from the movement centre in the trunk (Skjaerven, 2003). By studying the sculptures of the time it was possible to reveal shapes in the whole body that expressed the unity between top and bottom, right and left, front and back, centre and periphery (Charbonneau et al., 1970, 1972). The most prominent sculptures of the basic coordinations: (1) Laocoön and his sons, (2) Venus de Milo and (3) the Winged Victory of Samothrace will be presented.

Basic coordination 1: Flexion and extension in the trunk. The first basic coordination, flexion and extension in the trunk, can be seen as a closing and opening in the trunk (Fig. 1); the body as a whole is engaged around the central zone in the movement of closing or opening. The coordination is closely

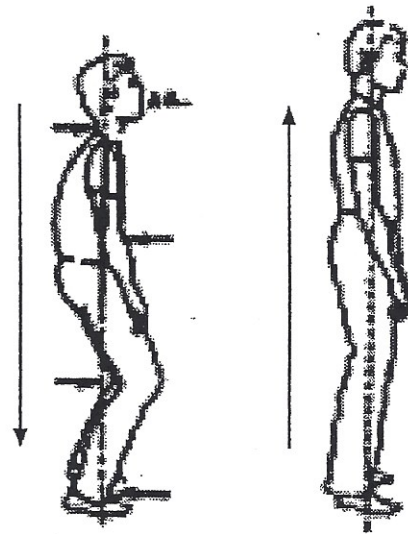


Figure 1 Flexion and extension in the trunk (Dropsy, 1988).



Figure 2 Laocoön and his sons (Photo of copy, National Gallery, Oslo. Østli, 1998. Original sculpture, in the Vatican, Rome).

connected to the breathing coordination, so expressing deeper feelings (Skjaerven, 2003). In the sculpture of Laocoön and his sons (200 BC) (Laisnè, 1995), in which the figures are struggling to escape from the sea-serpents that threaten to crush them, we can observe an opening coordination out from the centre of Laocoön's trunk (Fig. 2). In his sons we can observe a closing in the same centre. Both express extreme pain. We can follow the unity in the coordination from the centre of the body to the periphery.

The sculpture presents a visualization of the dynamic interrelation between *closing and opening in the trunk*. It is the same coordination recognized in the function of giving birth, in coughing and expressing the instinctive life (Reich, 1973).

healthy and the ill, drawing on insights from both the natural sciences and the arts (Soderberg, 1993).

Dropsy (1998a, b), the French movement educator and psychotherapist, has focussed particularly on the function of being and how the mind is expressed in human movement. Having studied the coordination between body and mind, he points out how a lack of integration of the two can affect not just human balance, but all aspects of human movement. He emphasizes that a person's movement quality and subjective experience of health and well-being are proportional to his or her integration and unity.

A first case study of the phenomenon of movement quality has been completed, showing that a general impression of movement quality can be fully described in four dimensions: a structural, a physiological, a psychological and a purely human dimension (Skjærven, 2003). This case-study showed that the unity of postural stability, free breathing and awareness can be a key to dynamic balance and basic to movement quality. The understanding and clinical relevance of the phenomenon of movement quality requires further study. The aim of this study was to explore the phenomenon of movement quality through studies of Greek sculpture.

Research questions

Can the phenomenon of movement quality, as studied by observation of Greek sculpture, be described in a four-dimensional way; in a structural, physiological, psychological and as a purely human dimension?

Can observation, reflection and literature studies of Greek sculpture be a tool towards a deeper understanding of movement quality, in clinical observation and reasoning?

Method

An interpretive phenomenological method was used (van Manen, 1990). Phenomenology is the study of essence (Merleau-Ponty, 1962). Merleau-Ponty focuses on embodied perceptual experience. Perceptual experience is the original relationship between man and world, the relationship upon which all articulation of our-self is built. The lived body is someone's lived relationship to the world. It is an ambiguous unity, both subject and object. The lived body as being in the world is the source of all experience and knowledge. The lived body con-

cerns the spatiality of the body, the synthesis of one's own body, and the body as it relates to expression and speech. The lived body is the source of meaning (Merleau-Ponty, 1962). Before we think, we are. We have a deep life within us before we think about it. This is called the *tacit cognito*, the fundamental experience of oneself, the silent, unspoken *cognito* that is the power of existing. This openness to the world before reflection and thinking is a form of consciousness, a form of transcendence.

When observing sculptures we use our lived bodies in this way, perceiving the sculptures through the *tacit cognito*, letting the sculptures send their meaning to us. Our lived bodies communicate with the sculptures and we form a new meaning and deeper knowledge within us, on which it is later possible to reflect. In that way art provides a foundation of experiences to which a phenomenologist may turn to increase practical insight, perceptiveness and intuitive sensitivity (van Manen, 1990). Since artists are involved in giving shape to their lived experience, the products of art are lived experiences transformed to configurations (van Manen, 1990).

Based on this research (van Manen, 1990; Merleau-Ponty, 1962; Heidegger, 1978), observation of art was used as a method to increase awareness and insights into the phenomenon of movement quality. Greek sculptures were chosen because they are known to express several dimensions of human existence (Laisné, 1995). Through observation and reflection of sculptures tacit knowledge can also be expressed in words. Art focuses to a large extent on tacit knowledge (Dewey, 1934). The method of close observation involves assuming a relation to the phenomena, as both participant and observer at the same time (van Manen, 1990). Close observation of an artwork gradually reveals its complexities and its import.

In the first part of the study, close observation of many Greek sculptures was undertaken to select those with the richest movement quality. Six sculptures were selected as having the richest movement quality. This was achieved in an interactive process between the observer and the sculpture. These sculptures were structured according to a four-dimensional model (Skjærven, 2003). In the first dimension, three sculptures were selected to illustrate three basic aspects of the dimension. For the other three dimensions, one sculpture was selected each.

In the second, theoretical, part of the study, literature concerning Greek sculpture was studied with a focus on basic movement elements and dimensions.

torsion and counter-torsion in the trunk, can be recognized in the function of walking (Fig. 5). This coordination is closely connected to the previous coordination of the spiral turning around the vertical axis, but now the top and bottom of the body turns in opposite directions. In the sculpture of the Winged Victory of Samothrace (190 BC) (Laisnè, 1995) we see a full *torsion and counter-torsion in the trunk* (Fig. 6).

In this sculpture we observe a deep interrelation between the upper and lower body, a continuous line of coordination from the left shoulder, through the centre of the body to the right hip and leg; no disruption or distortion is to be seen in the diagonal line of coordination.

Dimension 2—a physiological aspect of movement

Leaving the dominant shapes and lines of the sculptures, our next concern is to identify essential and outstanding features of physiological processes, for example, expressions of flow, elasticity and rhythm. During the period from Classical to Hellenistic art, the Greeks linked forms using rhythmical patterns of movement, which they enhanced by drapery (Charbonneaux et al., 1970). The sculptures of the Hellenistic period were ruled by a definite rhythm, as varied as life and nature



Figure 7 Nike untying her sandal (Photo of copy, National Gallery, Oslo. Østli, 1998. Original sculpture in Acropolis Museum, Athens).

itself. The artists sought to give the marble life by creating rhythm and flow through drapery.

In the sculpture of Nike untying her sandal (400 BC) (Bazin, 1981), we find her draped in cloth, which gives a flowing, rhythmical, vital impression (Fig. 7). The principle of rhythmic continuity is the basis of any organic unity, which gives permanence to living bodies. The firm design and broad curves of the figure give an impression of elegance and weightlessness (Bazin, 1981).

Dimension 3—a psychological/relational aspect of movement

In their sculptures, the Greeks sought to express psychological aspects of life, such as human passion and consciousness, and the interrelation with the external environment. Sculptures depict bodies animated by feelings and underline gestures and inner attitudes; sculptures in which inner states become visible and which allow us to imagine quivering vibrant bodies (Laisnè, 1995).

Myron was the sculptor who created the celebrated masterpiece, the Discus thrower (480–440 BC) (Charbonneaux et al., 1972), described as an archaic movement sculpture (Fig. 8). In the Discus thrower, Myron expresses the preparation for movement. The thrower has just swung his discus back to the optimal position prior to hurling it into its forward trajectory, whereby the body will follow in the same curve. We can see the rise of a

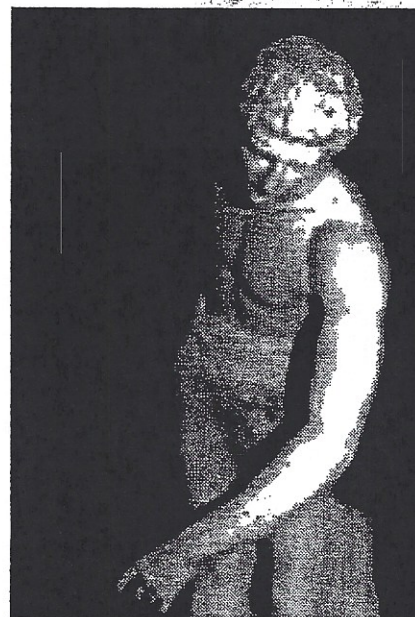


Figure 8 The Discus Thrower by Myron (Photo of copy, National Gallery, Oslo. Østli, 1998. Original sculpture in Museo Nazionale, Rome).

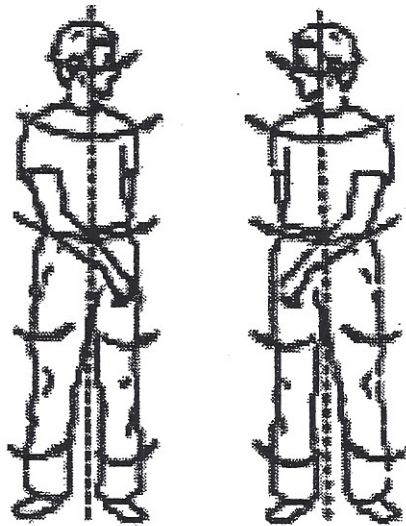


Figure 3 Turning around the vertical axis (Dropsy, 1988).



Figure 5 Torsion and counter-torsion around the central zone in the trunk (Dropsy, 1988).



Figure 4 Venus de Milo (Photo of copy, National Gallery, Oslo. Østli, 1998. Original sculpture in the Louvre, Paris).

Basic coordination 2: Turning around the vertical axis. The second basic coordination, the coordination of turning around the vertical axis (Fig. 3) is described as a spiral coordination. From feet to head, the whole body rotates as a unity in the same direction. In the Hellenistic sculpture of Venus de Milo (130–120 BC) (Laisnè, 1995), we can observe a turning within the whole sculpture, a coordination around the vertical axis (Fig. 4). Here we can observe a wonderful spiral, or serpentine, movement, coordinated around the axis from feet to



Figure 6 The Winged Victory of Samothrace (Photo of copy, National Gallery, Oslo. Østli, 1998. Original sculpture in the Louvre, Paris).

head. The whole body moves as a unity in a single direction, the same hip and shoulder moving backwards or forwards simultaneously.

Following the continuous spiral design of the movement, we observe grace and life in the sculpture (Laisnè, 1995). The same coordination can be recognized when turning to right or left in daily life, or in throwing the discus or javelin (Laisnè, 1995).

Basic coordination 3: Torsion and counter-torsion in the trunk. The third basic coordination, the

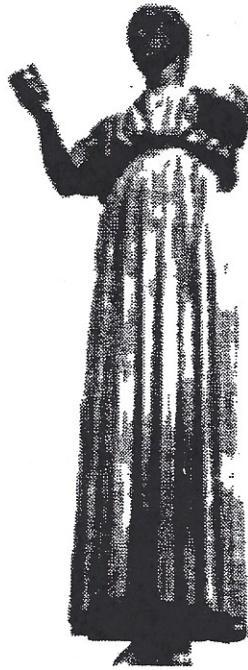


Figure 9 The Charioteer of Delphi (Photo of copy, National Gallery, Oslo. Østli, 1998. Original sculpture in Delphi Museum, Greece).

powerful and firm movement. The intention to throw is captured in the expression of a full, unified and integrated movement (Charbonneaux et al., 1972).

Dimension 4—the purely human aspect of movement (the essence of being)

Greek classicism rested essentially on a naturalism that reached for a truth even more profound than that of the momentary and individual (Charbonneaux et al., 1972). The Greek sculptors sought to express something unique and purely human in their works, some essential aspect of being. The Charioteer of Delphi (Fig. 9) is a masterpiece from about 470 BC (Laisnè, 1995).

This sculpture is endowed with a metaphysical radiance (Laisnè, 1995). It simultaneously suggests immobility and movement, rhythm and symmetry, life and design, giving the observer *the impression of unity, of being at ease and calm* (Charbonneaux et al., 1972). It gives an impression of being balanced, rooted downwards, yet upright and perpendicular, with central stability in the vertical axis. Sculptors of the time were concerned with the appearance of a balanced mass in the physical body, to show muscular strength, elegance and

function while at the same time radiating wholeness and unity (Laisnè, 1995).

Discussion

The results confirmed that the phenomenon of movement quality can be described both as a general impression of a whole unified person, observed and experienced, as well as in four dimensions, all expressed in Greek sculpture. The results revealed a deeper knowledge of these dimensions, compared to earlier research in which the four dimensions were described (Skjærven, 2003).

The four dimensions gave a fourfold picture of man, and represented an image of a whole and unified human being. Each of the chosen sculptures had such a high quality that it was possible to observe all dimensions in one sculpture. Additionally, individual sculptures revealed rich movement qualities associated with particular dimensions.

The result showed that the structural dimension visualized examples of basic coordinations of the trunk, as to how (1) flexion–extension, (2) turning and (3) torsion and counter-torsion of the trunk might be expressed, when fully coordinated with the whole physical body and person involved. It is our finding that movement quality had to do with how the total trunk coordination interacted with the periphery of the body; trunk in relation to the arms, legs and head, when there was integration between the different parts of the body. The physiological dimension visualized how flow, elasticity and rhythm could be expressed in the whole body in a unified way. The psychological/relational dimension visualized how a clear and focused intention could be expressed when being in fully relation with the environment. When the mind embraced the whole human being in action, it might give a unified impression, an impression of being whole, to the observer. The purely human aspect visualized how the radiance of being fully integrated could be expressed. We found that the dimensions represented the experience of being.

The results showed that close observation, reflection and literature studies of Greek sculpture can be a tool in further understanding of movement quality in relation to earlier research (Skjærven, 2003). Through observation of the selected sculptures it was possible to see more nuances in the movement: for example how form, rhythm, intention and pure being could be expressed in movement and how the sculpture could give an impression of being whole and unified. This was

possible through the close observation, where the researcher opened the sphere and gave time to let the sculpture "talk". The visualization of movement aspects in different dimensions provided new knowledge, something different from merely visualising the body from an anatomical point of view. Our experience was that this knowledge can be a tool to understanding how deeply movement quality is connected to the interplay between physical, physiological, psychological/relational, and to purely human aspects.

The four dimensions described in the study must not be seen as a hierarchical model. The work of art is enlarged when one incorporates the different aspects, so that the outcome becomes an experience that is enjoyed because of its liberating and ordered properties, discovered to be differentiation in a stream of vital activity (Dewey, 1934). The four dimensions may be seen as a differentiation of the inner activity when one comes into deeper contact with the different dimensions of human existence. The quality is concrete and existential, it has universal aspects (concerning human anatomy, physiology and psychology) and it also varies with individuals, since we are all permeated with our own uniqueness. This is also true within the expression of Art (Dewey, 1934).

It is our experience that art affects the imagination and our inner pictures of subjective experience of form and expression in human movement. Greek art can make us more aware of how the experience of being can be expressed through the body (Heidegger, 1996; Langer, 1953). Sculpture communicates the sense of movement with extraordinarily delicate energy, for example when witnessing Greek sculpture and the Winged Victory (Dewey, 1934). Art might help to facilitate the kinesthetic communication that involves imagination (Stanislavski, 1992). Artistic elements such as form and emotions are powerful sources of symbolic expression. When we experience a movement, it is from the inside that we become aware, not just of bodily shape, rhythm and intention, but also of being, of resting, or of dynamic physical states, and of how the energy is expressed, or simply of being more alive. Most important to a deeper understanding of movement quality, is its ability to reveal profound truths about the human condition, and to express a profound integration of form and emotion.

Using phenomenology matters as much to physiotherapists in clinical practice as to philosophers, because it focuses on the lived body (Engelsrud, 1990; Merleau-Ponty, 1962; van Manen, 1990). In this study, when observing sculptures, the observer used the lived body through the *tacit cognito*, letting the sculptures send their meaning towards

the observer. This can be expressed as if the lived body communicated with the sculptures and thus formed a new meaning and a deeper knowledge within the observer. In the same way PTs can learn to use their lived bodies to deepen their insights when observing patient's body movements. Studies of art can give an experience to which a PT may turn to increase practical insight in movement quality, for example to train the PT to alternate between observing sculpture, focusing on basic coordination in the trunk, and movement-experience. It is speculated that an interesting study might evaluate whether observation of movement nuances, in this way, is likely to affect a physiotherapists therapeutic approach.

Implications for clinical practice

According to Knudson and Morrison (1997), physiotherapists need to develop, on the one hand, a sensitivity to movement characteristics such as form, flow and rhythm, and on the other, an intention to understand the suffering patient (Knudson & Morrison, 1997). Historically, movement teachers, dancers and actors have studied movement quality of Greek sculpture and the rich nuances of human movement and expression (Chekhov, 1985; May, 1985; Horosko, 1991; Jarrassé, 1995).

We can learn to respond to art as we learn to respond to other "things" or situations in life (Best, 1985). Close observation of art, to the extent that one becomes engaged in it, provides access to the roots of our own feelings, responses or attitudes (Best, 1985). It is our experience that PT can learn to respond to a multitude of nuances to develop their sense of movement. More experienced and perceptive people may be able to observe and pick out the features of very subtle movement characteristics instantly and accurately.

In clinical practice PTs often have a general impression of movement quality, but this is not enough. Our results have showed that it was possible to identify different aspects of movement quality clearly, to differentiate in four dimensions and that it was possible to develop a more complete vocabulary concerning human movement. It is our experience that the result is relevant for PTs in clinical practice.

We wish to point to three factors:

(1) How does physiotherapy focus to achieve a general impression of movement quality?

Clinically, we suggest a conscious focus on *the whole moving person* instead of focusing on separate parts of the body. It is our experience

that the physiotherapist is mostly trained to focus one part of the body, or one part after the other. Focusing on the whole is an opportunity to become aware of the dynamic balance and the four dimensions of movement quality, for example how flow, energy and rhythm can spread through the whole person. In the same way the therapist can open to study art and to let the work of art "talk", the therapist can also open to let the patients' body "talk", to sense the patients' needs and presentation of balance and movement. For example, can the physiotherapist become aware of the patients' lack of self-awareness in movement.

(2) What does physiotherapy focus on to promote health through movement?

It is our experience that therapists are trained to focus on pathology more than healthy elements and aspects in movement. Observation of the Greek sculpture is suggested as an additional tool to identify movement resources within the human being. The four dimensions can be a framework for physiotherapist's to observe the total body coordination and a clinical guide to search for human potentials through a shift in focus: (1) the form of movement, (2) of flow, energy and rhythm, (3) of the expression of attention, intention and emotions and (4) of the personal being, the expression of self-awareness and of being whole and unified. These are all aspects of human movement (Skjærven, 2003). This may require a higher sensitivity to movement nuances in understanding patients suffering from chronic pain and muscle tensions. For example when the physiotherapist observes stiff, uncoordinated and disintegrated movement, it can be focused on in treatment to promote health.

(3) Do physiotherapists focus on the aspect of consciously *being in movement*, not only the function of *doing*?

In physiotherapy we usually focus on functional movement in terms of *doing*: for example in observing and training the function of lifting a glass of milk, to walk a distance, to put on a sock. To integrate the fourth dimension more fully in clinical work we suggest the clinical value of including training of the function of the mind, to focus on *being in movement*, for example of being in the rhythm in walking, and of being in the intention of walking, to focus on *being* in the moment, right here and now. This challenges the patient's involvement, including in the training of the sense of being present and aware in daily life situations (Dropsy, 1998b).

Hopefully this study will contribute to both clinical practice and reasoning within movement therapy. The four-dimensional model can be used in movement observation, step by step, from one

dimension to another. According to the needs of the individual patient, the focus in physiotherapy can be on different dimensions. In therapy it can help a patient to increase contact with the body and to stimulate organic resources. The study suggests that the four-dimensional model can improve the integration of movements and movement quality (Skjærven, 2003). For example, elastic and rhythmic movements can trigger reactions, giving the stressed and tensed patient a subjective feeling of greater dynamism and vitality. To become aware of a physiological need through rhythm can give access to energy that is latent within the individual.

Conclusion

The phenomenon of movement quality, as studied by close observation of Greek sculpture, could be described in a four-dimensional way; in a structural, physiological, psychological, and a purely human dimension. Observation, reflection and literature studies of Greek sculpture can be used as tools to achieve a deeper understanding of movement quality, as well as being of value in clinical work and reasoning.

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References

- Bazin, G., 1981. A Concise History of World Sculpture, Alpine Fine Arts Collection, Ltd., Publishers of Fine Art Books, New York.
- Best, D., 1985. Feeling and Reason in the Arts. George Allen & Unwin, London.
- Charbonneaux, J., Martin, R., Villard, F., 1970. Grèce Hellénistique (330-50 JC). Éditions Gallimard, Paris.
- Charbonneaux, J., Martin, R., Villard, F., 1972. Classical Greek Art (480-330 BC) (First published by Éditions Gallimard 1972). Georg Braziller, Inc., New York.
- Chekhov, M., 1985. On the Technique of Acting. Harpercollins Publisher, New York.
- Davidson, R., 1993. What is Art? Cynthia Parzych Publishing Inc., London.
- Dewey, J., 1934. Art as Experience. Putnam, New York.

- Dropsy, J., 1988. *Den harmoniska kroppen (Le corps bien accordé 1984, Paris)*. Natur och Kultur, Stockholm.
- Dropsy, J., 1998a. Body attunement—the conditions for body use. In: Skjærven, L.H. (Ed.), *Bevegelseskvalitet—kunst og helse (Movement Quality—The Art and Health)*. Bergen University College, Bergen.
- Dropsy, J., 1998b. Human expression—the coordination of mind and body. In: Skjærven, L.H. (Ed.), *Bevegelseskvalitet—kunst og helse (Movement Quality—The Art and Health)*. Bergen University College, Bergen, pp. 8–20.
- Engelsrud, G., 1990. Kjærlighet og bevegelse Fragmenter til en forståelse av fysioterapeutisk yrkesutøvelse (Love and movement. Fragments to understanding the profession of physiotherapy). Statens institutt for folkehelse, Avdeling for samfunnsmedisin, Universitetet i Oslo (University of Oslo), Oslo.
- Heidegger, M., 1978. *Basic Writings from Being and Time (1927) to the Task of Thinking (1964)* (trans. D.F. Krell). Routledge & Kegan Paul, London.
- Heidegger, M., 1996. *Being and Time* (trans. J. Stambaugh). State University of New York Press, Albany, NY.
- Horosko, M., 1991. *Martha Graham. The Evolution of Her Dance Theory and Training 1926–1991*. A Capella Books. Chicago Review Press, Chicago.
- Jarrassè, D., 1995. *Rodin. A Passion for Movement*. Finest S.A./Éditions Pierre Terrail, Paris.
- Knudson, D., Morrison, C.S., 1997. *Qualitative Analysis of Human Movement*. Human Kinetics, USA.
- Kvale, S., 1989. *Issues of Validity in Qualitative Research*. Studentlitteratur, Lund.
- Laisnè, C., 1995. *L'art Grec. Sculpture, Peinture, Architecture*. Finest S.A./Éditions PIERRE Terrail, Paris.
- Langer, S.K., 1953. *Feeling and Form. A Theory of Art Developed Form*. Charles Scribner, New York.
- Løgstrup, K.E., 1995. *Kunst og erkendelse. Kunstfilosofiske betragtninger, Metafysik II (2.udgave edn) (Art and Recognition. Considerations within Art and Philosophy)*. Gyldendalske Boghandel, Nordisk Forlag A.S., Copenhagen.
- May, R., 1975. *The Courage to Create*. W.W.Norton, New York.
- May, R., 1985. *My Quest for Beauty*. Saybrook Publishing Company, New York.
- Merleau-Ponty, M., 1962. *Phenomenology of Perception*. Routledge & Kegan Paul, London.
- Morris, W. (Ed.), 1975. *The Heritage Illustrated Dictionary of the English Language*. American Heritage Publishing Co., Boston, New York.
- Önell, A., 1999. *Quantifying human balance. Analysis of force plate data*. Department of Systems and Control, Uppsala University, Uppsala.
- Reich, W., 1973. *Orgasmens funksjon (1st 1942 edn) (The Function of the Orgasm)*. Pax Forlag A/S, Oslo.
- Skjærven, L.H., Gard, G., Kristoffersen, K., 2003. Basic elements and dimensions to quality of movement—a case study. *Journal of Bodywork and Movement Therapies* 7 (4), 251–260.
- Soderberg, G.L., 1993. Twenty-seventh Mary McMillan lecture: On passing from ignorance to knowledge. *Physical Therapy* 73, 797–807.
- Stanislavski, K., 1992. *An Actor Prepares* (trans E.R. Hapgood) 10th Edition.. Methuen Drama, London.
- van Manen, M., 1990. *Researching Lived Experience. Human Science for an Action Sensitive Pedagogy*. The Althouse Press, Ontario.

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