

The Heart of the Matter: An Exploration of the Persistence of Core Beliefs

Robert K. Blechman
St. George's University

Examples of the conceptual metaphor of the *heart* pervade our culture. More than just a representation of romantic love, the heart metaphor contains the residue of ancient beliefs concerning the seat of cognition and the basis for thought and emotion. This paper explores the hypothesis that the notion of the heart as a meditating organ is more than just a metaphor—it is an instance of how certain core (i.e. of the heart) beliefs persist across time and differing media. This paper briefly summarizes the portrayal of the heart in Western culture and examines the implications of its persistence in contemporary public discourse and media products.

Did You Hear the One About the Transplant Patient Who Left His Heart in San Francisco?

MEDIA ecology teaches us to temper our natural inclination to critique the content of communication media with an appreciation of media biases. Marshall McLuhan (1962) argued that the true “message” of a medium is the particular “service environment” created by that medium. For example, in the age of the printing press, the medium of the book assumed a service environment that included paper and ink manufacture, book binding, and book distribution, not to mention literacy programs—public or private—and the rest of the infrastructure necessary to disseminate and to support the practice of reading. The message also includes the values and beliefs necessary to support that medium. To read a book properly one needs quiet and privacy and so it could be argued that the printing press encouraged the public notion of having rights of privacy and individual liberties. Pay attention to the biases of a medium, to the service environment a medium requires, and one will understand the true impact of that medium.

A service environment has a greater impact on individuals and their societies than the content of a medium. McLuhan (1964) wrote that

the "content" of a medium is like the juicy piece of meat carried by the burglar to distract the watchdog of the mind. The effect of the medium is made strong and intense just because it is given another medium as "content." (p. 18)

Marshall McLuhan’s “juicy meat” quote, which has often been used as an excuse to discount the importance of the media content, actually points us to a profound question. If students of media ecology should attend to a medium’s biases in order to describe its true impact on our society, why are they so distracted by the particular content that is put into that medium? How does this work? And why do certain metaphors, images, modes of expression, or beliefs persist through time, across cultures, and within a variety of media?

To suggest a possible explanation, I am going to examine one metaphor that has persisted since the early stages of Western civilization. This conceptual metaphor will serve as an example of why certain “juicy meat” distracts our watchdog minds. I will demonstrate how the dominant

medium of communication of an era influences the presentation and interpretation of this conceptual metaphor. Finally, I will suggest some avenues of further exploration to determine possible explanations for this persistence.

Franklin Institute Web Site: The Giant Human Heart

IF a person visits the website of Philadelphia's, The Franklin Institute Online (2004b), and chooses the link to visit the exhibit of "The Giant Heart" (The Franklin Institute Online [TFIO], 2004a), he or she will discover something curious. Both online and at the museum itself, visitors can survey scientific information about the human heart, aided by a giant walk-through model that, proportionally, would be appropriate to a 22-foot-tall human being. Exhibits illustrate the structure of the heart, the function of circulating blood, and the various ways that normal heart function can be impaired by disease and injury.

We learn that in a healthy adult, the heart is a muscle about the size of a fist. It has four chambers and works in conjunction with the lungs to oxygenate blood and circulate it through the body. The average heart beats about 70 to 80 times per minute (at rest), but can handle rates twice that for short periods of exercise or other stress. The heart is shaped roughly like a triangle with rounded edges, with the major blood vessels entering and exiting at the top.

Franklin Institute Web Site: The Heart Goes Pop

AFTER contemplating the many scientific facts about this necessary muscle, a visitor can link to the site, "Heart History" (TFIO, 2004c); here, the reader can access activities related to the "The Popular Heart" to view representations of the heart in films, in literature, in advertising, on television, and in popular song. Also available at this site is a link to "The Poetry of the Heart" (TFIO, 2004g), where people can post their own poems about the heart

At this point, we have moved from a consideration of the heart as an essential part of the cardiovascular system to a consideration of the heart as a metaphor as expressed in our popular culture. The metaphor of the heart is not about the circulation of blood or the regulation of physical health. As portrayed in popular culture, the heart is the site of emotions, of certain deep thoughts that correspond to the true beliefs of an individual. The heart is also portrayed as a source of wisdom that can be tapped if we pay attention to it. The metaphor of the heart occurs almost everywhere we look in both "high" and "low" culture. Why is this contemplation of the metaphoric heart part of a scientific exhibition about the cardiovascular system? For that matter, why are references to a metaphorical heart so common in popular culture?

Take Another Little Piece of My Heart Now, Baby!

THE heart we read about in our literature, sing about in our songs, and associate with feelings and deep insight is not a cardiovascular pump. If one looks up *heart* in any reputable dictionary one will discover a long list of the ways in which the heart is used metaphorically. An individual can have a heart, take heart, be heartless, show heart, and be in the heart of things. Our language betrays deeper beliefs about the heart. We speak of our core beliefs or principles, *cor*, from the Latin for heart. When we want to truly understand a topic, we seek to get to the heart of the matter. Throughout our culture, the heart is portrayed as the site of emotions and of perceptions that correspond to the true beliefs of an individual. While it is not

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possible in this short paper to provide a comprehensive survey of this usage in our culture, examples using categories from the Franklin Institute's "Pop" sites will illustrate the point.

Heart Songs (TFIO, 2004f)

When Janis Joplin (Berns & Ragovoy, 1967) sang, "take another little piece of my heart," she was not discussing bypass surgery. The references to the metaphoric heart are the rule rather than the exception in most music—popular, classical, or traditional. Singers admonish us not to "break my heart," or to have pity on an "achy, breaky heart." Even Bob Dylan (1963), who generally avoided the romantic traditionalism of music lyrics in his use of metaphor could tell us, "I gave her my heart, but she wanted my soul."

The Poetry of the Heart (TFIO, 2004g)

Nor was Emily Dickenson (1961) concerned with anatomy when she wrote:

The heart asks pleasure first
And then, excuse from pain;
And then, those little anodynes
That deaden suffering. (p. 536)

Imagine if we substituted the word *brain* for the *heart* in Dickenson's poem. How would we react to the poem if we changed that one word?

Heart Literature (TFIO, 2004d)

To the protagonist of Antoine de Saint Exupery's (2000) classic, *The Little Prince*, the heart was a perceiving organ, not a biological pump: "One sees clearly only with the heart. Anything essential is invisible to the eyes" (p. 63). How would we react if the quote was: "One sees clearly only with the brain. Anything essential is invisible to the eyes"? This one change makes the quotation seem ridiculous. Clearly the metaphoric associations for the brain differ from those of the heart.

In *Pride and Prejudice*, Jane Austin's (1813/2003) Elizabeth Bennet rejects a marriage proposal with a heartfelt reply: "Do not consider me now as an elegant female intending to plague you, but as a rational creature speaking the truth from her heart" (p. 105). Elizabeth also uses her heart as an input device: "[She] found the interest of the subject increase, and listened with all her heart; but the delicacy of it prevented further inquiry" (p. 76). References to the heart as a metaphor can be found almost everywhere one looks in literature, regardless of the period, the language, or the genre surveyed.

Heart Movies (TFIO, 2004e)

A brief scene from the highly successful *Lord of the Rings* illuminates the portrayal of the metaphor of the heart in many films and on television:

Aragorn: No news of Frodo?

Gandalf: No word. Nothing.

Aragorn: We have time. Every day Frodo moves closer to Mordor.

Gandalf: Do we know that?

Aragorn: What does your heart tell you?

Gandalf: (meaningful pause) That Frodo's alive. Yes. Yes, he's alive.

(Weinstein & Jackson, 2004)

What if Aragorn had asked Gandalf: “What does your brain tell you?” It just does not sound right.

In each of these examples, the metaphoric heart stands in for aspects of cognition that we resist assigning to the head. One would expect that in our computer saturated era, the heart would lose traction as a site of cognition. Why this does not seem to be happening will be discussed at the end of this paper. It is time now to look at the origins of this persistent metaphor of the heart as the seat of cognition and emotion.

Building a Bridge to the 8th Century, BCE

IN order to understand the special significance given to the metaphor of the heart we must go back to the preliterate beginnings of our civilization. As Walter J. Ong (2002) noted, the particular character of human thought necessarily differed under conditions of what he called *primary orality*. Without written text to refer to, knowledge was passed on through oral recitation and emphasis was placed on meter, rhyme, and other mnemonic devices to enhance retention and recall. Speech was the dominant medium of communication.

Not just *what* we think, but the types of things we *can* think are affected by the available means of communication. In our literate and post-literate (what Ong called *secondary orality*) frames of reference, we are accustomed to locating thought and consciousness in the head. There is evidence that in cultures without writing, it was believed that thought originated in organs located in the central torso. According to Richard B. Onians (1973), the Greeks of the Classic period believed that consciousness resided in the lungs, with the heart contributing emotional content:

For the Homeric Greeks the θυμός [thymos, mind] is the “spirit,” and the breath that is consciousness, variable, dynamic, coming and going, changing as feeling changes and, we may add, as thought changes. Thought and feeling were, we saw, scarcely separable then, and it is still recognized that thought, even the abstract thought of the philosopher, affects breathing. (p. 50)

The pre-literate Greeks believed that breaths in the lungs were thoughts which were communicated through spoken words. Onians writes that

the belief that thoughts are words and words are breath . . . would lead to the belief that the organs of breath, the lungs, are the organs of mind. This conception of words would be natural, inevitable among men unfamiliar with writing . . . These words or thoughts are kept in the lungs. (p. 50)

The lungs were the source of thought and thoughts expressed as breaths were the source of speech. Ong (2002) pointed out that in primary orality, words were actions. Thus, breath was a source of power. Consider the origin of our term, *inspiration*. In Greek oral recitations, a god or goddess would breathe courage into an Achilles or a Hector or their men. Onians (1973) notes:

A sudden access of courage or impulse or resolve with its accompanying sense of energy and power was conceived as the work of a god . . . Hence he, who has it “breathes” it and the god, who gives it, “inspires” or “breathes it into him.” (p. 52)

From a contemporary perspective, it is incorrect to assume that references in classical literature to a “perceiving heart” or “divine inspiration” reflect a poetic metaphor rather than the pre-literate understanding of human anatomy. Lacking our modern knowledge of the circulatory

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system, the Classic Greeks believed that aspects of human consciousness did not reside just in the lungs, but were distributed throughout the chest, with different organs contributing different attributes. Expressions like “venting our spleen” when angered represent the residue of these kinds of beliefs. Onians (1973) notes:

As late as the fifth century B.C.E., Greek literature preserves an archaic somatic psychology that does not conceptualize an integral psyche but attributes one function to the lungs, another to the liver, a third to the heart and so on. (p. 4)

Any basic illustration of the cardiovascular system shows how the ancients could view the heart and lungs as complementary vessels for human cognition. The twin lobes of the lungs surround the heart and various major arteries and veins link the two organs. Excitement or stress can cause our hearts to beat faster and our breath to quicken. It was natural for the Greeks to connect these physical experiences with psychological conditions. These archaic perceptions persist today in the ways we describe our emotional states according to breath and pulse rate:

To pant with eagerness, to gasp or whistle with astonishment, to snort with indignation, to sob with grief, to yawn with weariness, to laugh with mirth, to sigh with sadness or relief are some of the more marked variations of breathing with feeling that have found distinct expression in everyday speech. The “breast heaving with emotion” is a commonplace. We “catch our breath” at a sudden sound, “hold our breath” in suspense, “breathe more freely,” and so the list might continue. (Onians, 1973, p. 50)

Juicy Meat

CERTAIN types of media content persist in human cultures despite changes of language, the introduction of new technologies, and the upheaval of social orders. Metaphors, such as the heart metaphor, shape much media content and constitute a powerful distraction from media structures. These content elements are so much a part of the way we think that they become transparent, hidden in plain site, and therefore difficult to bring to the foreground for examination. We become numb to the implications of the content, its origins, and the influence it has on the way we think and what we think about. Content of this type is what Lakoff and Turner (1989) call a basic conceptual metaphor:

We usually understand them in terms of common experiences. They are largely unconscious, though attention may be drawn to them. And they are widely conventionalized in language, that is, there are a great number of words and idiomatic expressions in our language whose interpretations depend upon these conceptual metaphors. (p. 50)

It is beyond the scope of this paper to consider all cultures that discounted the head as the source of thought or consciousness. However, a few examples from other early pre-literate and literate cultures will further illustrate the point.

Palpito, Ergo Cogito

DURING the process of mummification, ancient Egyptians discarded brain tissue as unnecessary for existence in the afterlife, but preserved the intestines, liver, and other organs in special canopic jars for the journey. The heart, thought to be central to the

individual's "self" or consciousness, was left in place. As inheritors of many Egyptian beliefs, Old Testament Hebrews also believed that the heart was the thinking organ. A prayer from Jewish Sabbath and Festival services (circa 400 BCE) asks, "May the words of my mouth and the *meditations of my heart* [italics added] be acceptable unto Thee, O Lord, my Rock and my Redeemer" (Bokser, 1983, p. 189). And another asks: "Open Thou my heart, O Lord, to Thy Torah that my soul may eagerly perform Thy commandments" (Bokser, 1983, p. 198). A similar heart-centric view of cognition can be found in the foundation literatures or folklore of many cultures around the world.

As civilizations move from a predominantly oral mode to a written mode and alphabetic literacy becomes the prevailing medium of communication, the metaphor of the heart is transformed. As alphabetic literacy grew, the Romans abandoned the lungs as the location of anima. Onians (1973) asks: "What did the Romans believe to be the organs of consciousness, of mind? It is obvious that for them, even more than for the Greeks, the heart (cor) was important (cf. excors, vecors, etc.)" (p. 40). When speech receded as the dominant medium of communication and writing gained ascendancy, the lungs were no longer believed to be the seat of thought. Literate Romans believed *Palpito, Ergo Cogito*. Thoughts and aspects of the thinking process, like memory, resided in the heart. As alphabetic literacy spread, the metaphor of the heart was adapted to allow literate characteristics.

When You Were Young and Your Heart Was an Open Book

PAUL McCartney's (1997) lyric, the title of this section, refers to a heart metaphor that gained ascendancy when the printing press made inexpensive and portable books available to a larger percentage of Europe's population. In his scholarly review of medieval beliefs about the heart, *The Book of the Heart*, Eric Jager (2000) documents how a society that adopts a new medium of communication reinterprets the metaphor of the heart. A literate society begins to interpret the heart metaphor in ways that reflect the characteristics of their communication technologies. In literate Greek, Hebrew and, later, Roman circles, the heart was described as a tablet upon which "impressions" were recorded or as a scroll which one could unfold to review thoughts and experiences. When the codex and then the printed book dominated as communication technologies, the heart was described as a book upon which one's memories were inscribed.

The heart book was private, available only to the individual for review. The painting of *The Last Judgment from the Cathedral of St. Cecile* in Albi, France¹, shows the souls of the dead, with their secret heart books displayed on their chests (Jager, 2000). In the afterlife, the heart book was opened to determine how the deceased would be judged and what rewards or punishments their lives merited. Jager (2000) notes that: "The double sense of the word 'character,' both textual and ethical, further emphasizes that each person is responsible for 'writing' his own life" (p. 140). What we see here is a vivid depiction of what McLuhan (1962) referred to as "the interiorization in man of the structures of earlier technology" (p. 174). That medieval writers and artists would imagine the heart as a book illustrates how a communication medium can determine the interpretation of the metaphor of the heart.

Early Recordings

As the textual influence took hold, the heart became the seat of memory, involved with the recording of life and the recollection of experiences. According to Jager (2000),

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“Memory was often regarded as a specific function of the heart, as embodied in terms such as *recordatio*, with recollection figured expressly as the ‘reading’ of an inward book” (p.122). According to Jager, the word *record*, which is used in conjunction with electronic media in our digital age, comes from the Latin word *recordatio*, to recall, with the Latin *cor* (heart) at its root. We still speak in terms of learning something “by heart” (p. xv). The notion of the heart as a book fostered certain attitudes toward memory and experience:

During the later Middle Ages, book metaphors also seem to have grown in popularity as actual books proliferated among the laity and as reading and writing became more widely familiar practices, in turn encouraging new mental habits and reshaping notions of selfhood. (p. 104)

An individual’s heart book was unique, a record of his or her personal experiences, sins, and virtues. Jager (2000) notes that “the human individual who long had been the protagonist of a divinely supervised narrative now became the sole author, reader, and exegete of his own interior ‘book’—a truly modern self” (p. xxi). The contemplation of a unique self allowed the notion of human individuality to emerge from a collective society. McLuhan (1960) noted, “Print drove people like Montaigne to explore the medium as a new art form providing an elaborate means of self-investigation in the act of learning as well as self-portraiture and self-expression” (p. 293).

Who Wrote the Book of Love?

ANOTHER consequence of the secular spread of books after the invention of the printing press was the transformation of the metaphor of the heart into a romantic image. Where Christian theologians would open their “heart books” to the words of God, later lay readers would transcribe the attributes of their true loves onto their hearts. As medieval readers interiorized the metaphor of the heart as a book, they also exteriorized it in specially designed heart shaped manuscripts and, later, printed books. Images from this era depict earnest young men grasping books that are literally shaped like a heart. The image of the heart in *Young Man Holding a Book*² is not the physical heart, but the Valentine heart we know so well. Perhaps the origin of this design comes from people’s efforts to externalize the book of the heart. One starts with the actual physical heart, from which one wants to create a shape that can function as a manuscript. Perhaps it is inverted to make it easier to hold. Then, when the heart book is opened, it appears as a valentine (see Figures 1 & 2). Here we see a possible example of how the dominant medium of communication can influence the metaphor of the heart and the symbolism of romantic love. It is also important to note that substituting the graphic depiction of the heart with an iconic valentine moves the metaphor of the heart to a different level of abstraction and further encourages metaphoric as opposed to literal usage.

When You Were Young and Your Heart Was a Comic Book

THE notion of the heart as a private, internal book of accounts survives in our modern comic books and graphic novels. Instead of a book revealed on the chests of the souls awaiting judgment, iconic symbols are visible on the chests of superheroes. Superman’s chest emblem, roughly heart shaped, set a fashion standard for all comic book heroes. With great power comes great responsibility, including the need to hide one’s true self. This preoccupation in modern graphic novels with a secret identity shows a connection to medieval concerns and

represents a further example of how the metaphor of the heart can reflect the influence of the medium.

The Heart of the Matter

IN considering the metaphor of the heart as an example of content's juicy meat that distracts us from the true impact of media, we should remember McLuhan's (1964) other point: "The effect of the medium is made strong and intense just because it is given another medium as 'content.'" (p. 18). We have seen that the metaphor of the heart derives its power from our cognitive inclination to convert a somatic experience into a culturally meaningful thought or meme. The power of the metaphor of the heart as content is augmented by the manner in which it can reflect and reinforce the biases of the current dominant medium of communication in a culture. As cognitive linguist Steven Pinker (2000) notes:

"Culture" refers to the process whereby particular kinds of learning contagiously spread from person to person in a community and minds become coordinated into shared patterns, just as "a language" or "a dialect" refers to the process whereby the different speakers in a community acquire highly similar mental grammars. (p. 427)

Following Noam Chomsky (1975), Steven Pinker has theorized that if there are structures in the brain that allow us to learn and use language, there may also be structures that account for the other things in our environment that we pay attention to. Pinker (2000) notes:

Learning mechanisms for different spheres of human experience—language, morals, food, social relations, the physical world, and so on—are often found to work at cross-purposes. A mechanism designed to learn the right thing in one of these domains learns exactly the wrong thing in others. This suggests that learning is accomplished not by some single general-purpose device but by different modules, each keyed to the peculiar logic and laws of one domain. (p. 426)

These mind "modules," which may have developed for entirely different evolutionary purposes, may help explain why a member of a culture focuses on some things and not others. Just as, according to Chomsky and Pinker, we are "wired" to use languages, we may also be wired to use certain imagery, to create narratives, and to value certain elements in our environment over others. The somatic effect of emotion on pulse rate may act as a continuing encouragement to reify the concept of the heart as a thinking organ. Even if we are not so wired, the inherent conservatism of cultural traditions encourages us to formulate new thoughts by employing old modes of expression. Lakoff (1990) notes that "these observations support the view that our conceptual system is dependent on, and intimately linked to, our physical and cultural experience" (pp. 112-113).

Hidden in our language, folded into common beliefs and expressions, sanitized by depiction as a valentine, the metaphor of the heart spreads automatically throughout our culture and this unconscious process guarantees its continuity. Constant exposure to the metaphor of the heart reinforces its message, but also renders it invisible. We do not think about it or what it might mean, just as we numb ourselves to the biases of the medium used to propagate the metaphor.

The Beat Goes On

WE are now deep within what Ong (2002) called a period of secondary orality. How will the retrieval of speech as a dominant medium of communication once again transform the metaphor of the heart? I have suggested that the metaphors in our language not only reflect deep-seated beliefs about such things as the seat of consciousness and the nature of memory, but as transformed by the dominant medium of communication, shape public discourse concerning such topics as cognition, individuality, and intellect. In spite of our contemporary obsession with computer-centric metaphors of consciousness (Jager, 2002), the heart metaphor remains powerful. If there is a connection between speech-dominated communication and locating aspects of consciousness in the chest, will we continue to act as if knowledge originates in the brain or will the notion of a deeper wisdom emanating from somewhere in the chest gain ascendancy? It is not an accident that many portrayals of mechanical men in our media are concerned with their acquiring feelings or a heart. The Tin Woodsman in *The Wizard of Oz* (LeRoy & Fleming, 1939) searches for a heart. The android Data in *Star Trek: The Next Generation* (Roddenberry, 1987-1994) searches for his creator's "emotion chip" in order to become more like humans. Enhanced by aural electronic media in our era of secondary orality, the portrayal of the heart as the site of our deepest knowledge may explain why the scene between Gandalf and Aragorn cited from *Lord of the Rings: The Return of the King* (Weinstein & Jackson, 2004) works for us. Lacking concrete objective evidence one way or the other, Gandalf "knows in his heart" that Frodo is still alive. The implicit message is that having knowledge or intellect is not enough to be fully human; one has to have the right "gut instinct."

What is Your Gut Reaction?

WHAT appeared to classical societies as a characteristic of human anatomy has slowly, over the ages, become a metaphor. No one today believes that the seat of consciousness can be found in the heart or lungs, and yet the references persist. In primary orality people assigned different aspects of cognition to different organs. We are content in most cases to let the heart represent all feeling or emotion. When placed in opposition to the head or intellect, the heart prevails in modern cultural references as the deeper source of wisdom and the more reliable arbiter of reality.

The metaphor of the heart is changing to reflect contemporary beliefs at some level about human cognition and emotion. Even the term "at some level" implies that there are different ways of knowing and believing and these levels may be within the mind or at differing locations within the body.

If there is a deeper seat of wisdom that we all possess, and if this notion, dormant in the era of literacy, becomes dominant in the era of secondary orality, why should anyone listen to academic experts or subject matter experts of any type? Much of our current public debate between a faith-based and a reality-based orientation may be a manifestation of this heart-head split. This illustrates the danger of a hidden metaphor like that of the heart. If a country can be governed "from the gut," what need is there for subject matter experts on foreign policy, economics, or political agendas?

Media Cardiology

PERHAPS students of media ecology can provide a means for addressing the influence of conceptual metaphors like that of the heart. Any transition period between dominant media brings into view, for a short time, the hidden metaphors that have influenced thought and social order. Adoption of new technologies or media of communication do not eclipse true conceptual metaphors, like those of the heart, although, as we have seen, they can modify them. Shaped by the service environments of the dominant media of communication, these hidden metaphors reinforce attitudes and beliefs, justify public policy, and support political and social movements. One could look at other pervasive metaphors in a culture, including those having to do with male-female relationships, attitudes towards rich and poor, racial biases, and beliefs about youth and aging. By attending to the mechanisms that help perpetuate cultural metaphors, we can begin to understand how media content has the ability to distract us from media biases.

As we move deeper into the era of secondary orality, we media ecologists must become adept at making manifest what lies hidden in the language, stories, and beliefs of a culture. Understanding the particular use of conceptual metaphors as content in the dominant media of a culture can provide signposts to how the “service environment” that surrounds a medium is shaping thoughts, beliefs, and attitudes. By becoming aware of how persistent beliefs, like the metaphor of the heart, work within the communication media service environment to influence our culture, we can decide which influences to accept and which to reject. The role of the media ecologist in this new era should develop in a manner McLuhan (1962) suggested for public intellectuals: The “intellectual is no longer to direct individual perception and judgment but to explore and to communicate the massive unconsciousness of collective man” (p. 269).

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Footnotes

¹ This image can be viewed at <http://www.marie-albi.fr/eng/arthistory/places/stececile/jugeder.html>.

² This image can be viewed at http://www.metmuseum.org/Works_Of_Art/viewOneZoom.asp?dep=11&zoomFlag=0&viewMode=1&item=50.145.27.

Figure Captions

Figure 1. Illustration of the human heart.

Note. From Microsoft Clip Art.

Figure 2. Illustration of the human heart as a valentine.

Note. From Microsoft Clip Art.

Title

Figure 1.

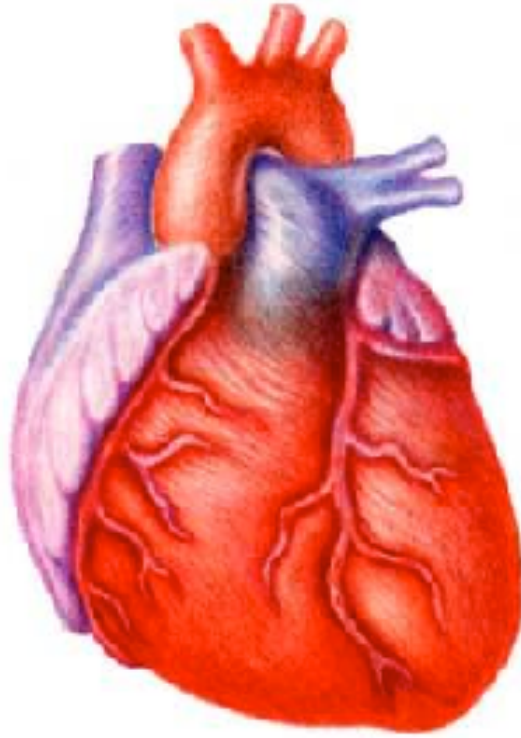


Figure 2.



Title

Author