

3. LECTURE

PHENOMENOLOGY - SUBJECTIVE EXPERIENCE AND THE EVERYDAY LIFE-WORLD

Ladies and Gentlemen,

Today, the question we want to ask is what theoretical fundamentals can we work from in social and cultural research which focuses on our *subjective experiences* and our *life-world*. Central to this question are findings from the *cognitive sciences* and from philosophical and sociological *phenomenology*.

My *subjective experience* is the immediate way in which my world is given to me - and me alone - in my everyday existence. In the first part of this lecture, we will see what world riddle the natural and cognitive sciences are faced with in light of the phenomena of experience and what problems subjective experience throws up for a theory of understanding others and for qualitative research.

The rest of the lecture looks at the phenomenological analysis of basic cognitive structures in our everyday *life-world*. As unquestioned assumptions, these structures define our thoughts and our actions but are usually taken for granted in social and cultural research and are thus not taken into consideration. Yet an understanding of them provides important foundations for the hermeneutic approach in qualitative research and data analysis.

Allow me to begin by providing a personal remark. I am not a trained philosopher, rather I have dealt with the phenomenon of consciousness from the perspective of the social sciences. However, the *philosophy of mind* is one of the most complex areas of modern scientific thinking for which I cannot even come close to providing an overview. Therefore, all I can offer here is a rough guide to what I as a qualitative researcher find to be important to know.

1. SUBJECTIVE EXPERIENCE

Have you ever tried to tell someone what it felt like to experience serious pain? Each of us can only ever speak of our own subjective experience in the first-person singular. I can only ever convey to another what my pain, the color red or a feeling of happiness feels like *indirectly*, e.g. through facial expressions and language or „works of art“ in the broadest sense.

In philosophy and the cognitive sciences, we speak here of *qualia* or *properties of experience*. In the following explanations of *qualia* and the *mind-body problem*, I draw from sources such as *Hastedt (1978)*.

The separation between the *thinking and the extended (corporeal) substance (res cogitans and res extensa)*. It claims a strict *dualism* of mind and body and has shaped thinking in modern times originated with the French philosopher *René Descartes (1596 - 1650)* who we met in our first lecture. *Descartes* here tackles the *mind-body problem* that has been discussed since ancient philosophy and shaped by religious ideas and which is described in

its secularized form as *thepsiychophysical problem*. *Descartes* assumed that the mind is a privilege of humans, and regarded animals as clockwork-like machines without consciousness.

Qualia are foreign objects within the natural sciences' view of the world. As early as 1882, Berlin-born physiologist and founder of experimental electrophysiology *Emil du Bois-Reymond* (1818-1896) declared the qualities of consciousness to be an unresolved world riddle in his lecture *On the limits of our knowledge of nature*:



Abb. 3.01: Rosen von Vargemont - Detail (Auguste Renoir 1885)¹

„I feel pain, or pleasure; I experience a sweet taste, or smell a rose, or hear an organ, or see something red... It is absolutely and forever inconceivable that a number of carbon, hydrogen, nitrogen, oxygen, etc., atoms should not be indifferent as to their own position and motion, past, present, or future. It is utterly inconceivable how consciousness should result from their joint action.“ (*du Bois-Reymond*, 1974, pp. 17-32).

In the twentieth century, the riddle of the qualia became a central subject of the philosophy of mind and cognitive sciences. Here are the most important schools of thought:

- Cartesian *dualism* assumes that alongside the physical world of the body there exists a mental substance that is outside the laws of physics, while *monism* assumes a common principle for mind and body. Dualism raises the question of how an interaction between the intangible mind and the physical body is possible.
- In neuroscience and the philosophy of mind, attempts are made in part to trace the phenomena of experience back to physical-chemical processes in the vein of *reductionism*: phenomena of experience are „nothing other“ than representations of specific states in neural networks. Here, qualia are declared to be meaningless epiphenomena or their existence is simply denied - as is the existence of action intentions and the free will of acting individuals.
- The *dual-perspective hypothesis*, on the other hand, works from the assumption that physical phenomena and their neurophysiological counterparts are *different ways of looking at and describing the same process*, or figuratively speaking as two sides of a single coin. In the *first-person perspective* I am dealing with impressions, feelings, things, thoughts, intentions and units of sense which I can reflect and communicate through language. In the *observer perspective* of the neuroscientist, equipped with my physical-chemical methods, I can absolutely only ever come across action potentials and biochemical processes.

¹ Wikimedia Commons (The Yorck Project (2002) 10,000 Masterpieces of Painting (DVD-ROM), distributed by [DIRECTMEDIA](#) Publishing GmbH)

I can record and describe these only through series of measured values and imaging methods – though for their part these only gain their „meaning“ through mental processes. Neither perspective can be reduced to the other, and their mixing (how „the brain thinks“) leads to pseudo-problems or category mistakes. Thus, the subjective perspective of the qualia essentially cannot be examined through the objective perspective of the natural sciences; natural sciences and humanities are fundamentally different views on humans, each with their own ontologies and methods.

The *emergent hypothesis* of consciousness promises to point the way to a potential solution to this riddle. Emergence is a characteristic property of complex systems, in which entirely new properties, which are not present on the *micro level*, can „emerge“ at the *macro level*. Just as living matter with the property of asexual reproduction is formed on the basis of complex chains of amino acids, so too should phenomena of experience emerge in highly complex neural networks, or so the hypothesis goes. (According to the emergent hypothesis, artificial neural networks can in principle also develop forms of consciousness with the same high level of complexity).

Of course, the emergent hypothesis cannot explain the riddle of the qualia and of the connection between mind and matter, instead all it provides is a model of thinking. Some researchers assume that to understand the emergence of phenomena of experience in neural networks requires a scientific revolution. Others argue that the qualia problem is essentially unsolvable for the human mind because to understand the most complex system requires an even more complex system.

You might be wondering, what do qualia have to do with qualitative research? However, that experience which is only directly accessible to me in the first-person perspective raises the question of how *understanding others* in the social world is at all possible and what preconditions this is associated with. This lecture and the following one deal with the theoretical foundations of understanding the other and of human communication.

2. PHENOMENOLOGY: INTENTIONALITY AND LIFE-WORLD

A central pillar for a theory of understanding others, and therefore also a theory of human communication, comes to us from phenomenology and phenomenological sociology which is primarily about conducting an inventory of phenomena of experience from the first-person perspective.

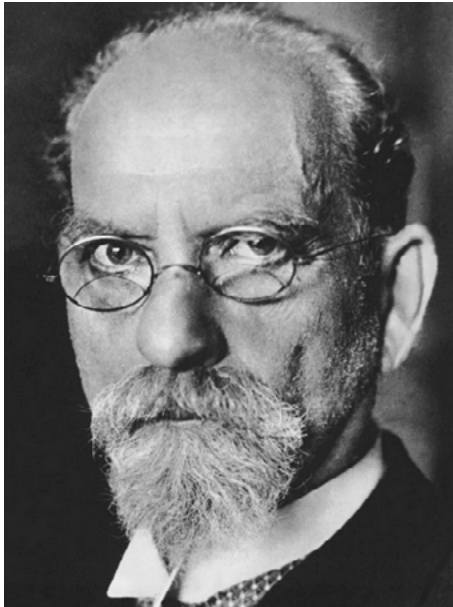


Abb. 3.02: Edmund Husserl (1859-1938)²

Edmund Husserl (1859-1938), an Austrian-German philosopher and mathematician, and founder of *phenomenology*, wanted to get beyond all theoretical concepts, meaning also beyond our physically shaped world view, „*to the things themselves*“ and therefore focuses his philosophy on the immediately given *phenomena of human experience*. The world *phenomenon* comes from the Greek (Phainomenon = that which appears, shows itself, the way in which things appear - not to be confused with simple appearance).

Husserl's phenomenological method places the „*eidetic intuition*“ of the phenomena in the center by observing it free from presuppositions and prior knowledge using *systematic introspection*. This is achieved, on the one hand, through a „*bracketing*“ of all presuppositions - e.g. even the assumption of existence, i.e. the assumption that the content of experience relates to a world that really exists.

Another method of eidetic intuition is *eidetic reduction* (from the Greek *eidos* = form, idea). In thought experiments, the individual components of a phenomenon are varied with the aim of deciding which components are indispensable for its essence. For example, I imagine what the essence of a table is by reviewing in my mind what, in my perception, is absolutely indispensable for a table: the tabletop and some sort of fixture, be it table legs, a wall attachment or suspending it from the ceiling. In Lecture 6 on *Texts*, we will see how even in qualitative data analysis, for example, the essence of theoretical concepts can be investigated using thought experiments.

According to Husserl's phenomenological analysis, experience is always the „*experience of something*“. It is comprised of a *series of acts*; it is „an unlimited flow of phenomena with a consistent *intentional line*“. *Intentionality* (directedness toward something - not to be confused with intention) is the essential feature of our experience: pure thinking is „*unthinkable*“. We are always referred or directed to the content of our experience. When I perceive something, I not only have sensory impressions, I also see *something*: colors, people, trees, houses, tables and chairs or events. When I think, I think *about something*. Feeling, perceiving, believing, wishing, speaking, acting are *intentional acts* which create a reference between an acting person and the „*things*“ or the world.

For the subject of the social sciences, this means that we are not dealing with isolated mental processes but rather experience things and people in situations, people acting in reference to their environment. Intentionality contains the difference between purely *reflective behavior* and human *action*, and also between human thought and artificial intelligence.

In the world created by humans, in our „*second nature*“, in tools, language, images, technical achievements, works of art, institutions (all contained in „*qualitative data*“!), we are as it were dealing with „*solidified intentionality*“.

² Wikimedia Commons. Author unknown (Mondadori Publishers)

In his later work, Husserl introduced the concept of the *life-world* to philosophical discussion. The life-world encompasses the everyday *prescientific experience of the world* of the first person as a natural, unquestioned basis for our thoughts and actions. Even the most abstract scientific theories have their foundations in the basic natural experiences of our life-world.

3. STRUCTURES OF THE LIFE-WORLD

The sociologist *Alfred Schütz* (1899-1959) utilized *Husserl's* phenomenological concept of the life-world to lay a theoretical foundation for the social sciences. His academic career was unusual. He studied law, economics and philosophy in Vienna and worked as a banker his entire life. He wrote his comprehensive philosophical and sociological works, the importance of which was only recognized after his death, alongside his profession. As a Jewish man, he emigrated to the US in 1938 where he achieved academic honors at the end of his life at the famous *New School* in New York.



Abb. 3.03: Alfred Schütz (1899-1959)³

The great achievement of *Schütz'* was fleshing out the theoretical knowledge provided by philosophical phenomenology for the social sciences. He was discovered as a great theorist of the social sciences and one of the founders of the new sociology of knowledge posthumously in the 60s.

In an early work „Phenomenology of the Social World“, Schütz provides a theoretical foundation for the interpretive sociology (*Verstehende Soziologie*) of the great sociologist *Max Weber* (1864 - 1920). His main work *The Structures of the Life-World* (published posthumously in 1979 and 1984 by *Schütz and Luckmann*) begins with the following description of his program:

„The science that would interpret and explain human action and thought must begin with a description of the foundational structures of what is prescientific, the reality which seems self-evident and what is prescientific, the reality which seems self-evident to men remaining

³ Wikimedia Commons (Public Domain of the USA)

within the natural attitude. This reality is the everyday life-world. It is the province of reality in which man contentiously participates in ways which are at once inevitable and patterned. The everyday life-world is the region of reality in which man can engage himself and which he can change while he operates in it by means of his animate organism. At the same time, the objectives and events which are already found in this realm (including the acts and the results of actions of other men) limit his free possibilities of action. They play him up against obstacles that can be surmounted, as well as barriers that are insurmountable. Furthermore, only within this realm can one be understood by his fellow-men, and only in it can he work together with them. Only in the world of everyday life can common, communicative, surrounding world be constituted. The world of everyday life is consequently man's fundamental and paramount reality.

By the everyday life-world is to be understood that province of reality which the wide-awake and normal adult simply takes for granted in the attitude of common sense. By the taken-for-grantedness, we designate everything which we experience as unquestionable; every state of affairs is for us unproblematic until further notice." (Schutz and Luckmann 1973, p. 3-4),

Schütz is not concerned with the individual particularities of individual people, but with the general *knowledge structures* which actually allow us to think and act. Like Husserl, he describes the life-world from the first-person perspective, assuming that the life-world always exists as a *social world*. His phenomenological self-reflection leads to a mapping of our practical knowledge of the everyday life-world.

Here are the main findings of his phenomenological analysis:

- *Meaning instead of stimuli*: The world for me is never a collection of simple sensory impressions, rather it appears to me in the form of connected objects, people and events which always have a „meaning“ for me. This follows from the intentionality of our acts of experience and was empirically proven by *Gestalt psychology*.
- *Pragmatic motives*: When I act in the life-world, I am successively shaped by *pragmatic motives*, i.e. my interest is directed toward the existing problems of practical living.
- *Realm of action and structure of knowledge*: The life-world is, on the one hand, the *realm of action in my everyday life-practice*, and on the other constitutes a *structure of my experience*, namely the stock of practical knowledge which allows me to actively participate in everyday life. I acquire this stock of knowledge in the course of my socialization. It is comprised predominantly of „taken-for-granted facts“ which we do not usually reflect on. We learn, in painful fashion, what significance this stock of knowledge has for us when it becomes dried up, due to dementia, for example.
- *Knowledge of the self and the outside world*: I experience my knowledge of myself as a person and of the existence of an outside world that exists independently of me as unquestionable. I was born into it and I know that it existed before me and will exist after me. I know, in particular, of the spatial, temporal and social structure of the life-world.
- *Spatial centering*: The life-world space is broken down into zones of actual, potential and unattainable reach, with my own person as the center. Within the zone of current reach is my zone of influence which I can affect through direct action with my body.

- *Temporal centering*: In the *subjective time* of the flow of consciousness, the „now“ of the experienced present (the „moment“) turns into a „just before“ in an inevitable succession and becomes a „past now“ reaching back to the earliest memories. The „now“, as the horizon of experience, also contains a foreshadowing of the immediate, near and far future.
- The *subjective time* is embedded in my day-plan and life-plan, with past, present and future differentiated. My subjective experience of time is connected to the „*social time*“ through the clock and the calendar and thus can be coordinated with the subjective experience of time of my fellow-men.
- The *future* includes two „*idealizations*“ (which are never fulfilled), namely the taken-for-granted expectations of the constancy of the life-world, the convictions of „And so on“ and „I can again and again“. Our everyday experience is shaped by such „*contrafactual idealizations*“ of different types as we will see.
- The *social world* is justified by the taken-for-granted existence of other people who are endowed with consciousness like me, who see the world in its essential aspects as I do, and who intervene in the world with actions as I do in order to pursue their goals which are essentially similar to my goals. This idealization, i.e. the assumption of the fundamental similarity of our fellow-men, creates the *condition of the possibility of common understanding* with the other; it is also a basis for *empathy*, i.e. sharing emotional feelings. Present differences and conflicts can only be experienced and addressed on the basis of this essentially imputed similarity.
- The *social world* is broken down for me into my own *surrounding world* (people who I personally know), the *fellow-world* (contemporaries whose existence I am aware of), the *before-world* (people from past eras) and the *after-world* (people of future generations). There is a fundamental differentiation between the „*experience of being face-to-face*“ with the fellow-man (*Us relationship*) and different levels of anonymity in the „*mediated experience*“ of the social world. (*Schütz* was not aware of the intermediate province of the virtual experience of face-to-face on a screen or even in virtual reality, which is gaining ever more importance today).

4. SENSE-GIVING

A particularly significant contribution to the social sciences comes from the analysis of the life-world as *context*. In the spontaneous living of the flow of consciousness, my experience has no meaning. *Subjective sense-giving* is a fundamental human capacity to experience. Only when I address my experience with a reflexive attitude can (1) past - or also, in looking forward, future - experiences be singled out from my flow of consciousness through a creative act as „meaning something“ and (2) be classified according to the *schemata of my experience* or *interpretative patterns*. I can relate this classification to individual experiences as much as I can to broader life-contexts and even my entire life, e.g. in biographical self-reflection.

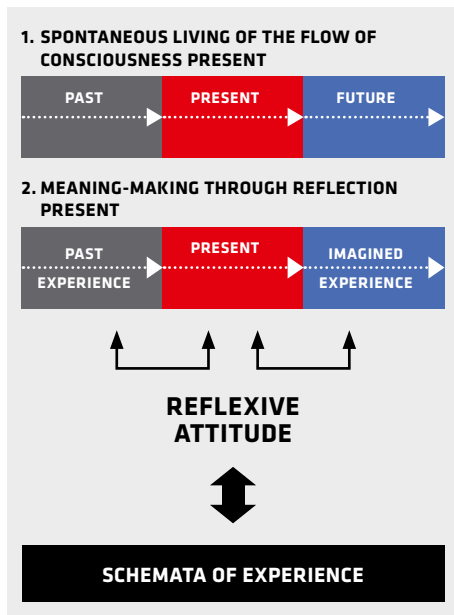


Abb. 3.04: Flow of Consciousness and Reflection ⁴

We met this act, which occurs in two steps, in Lecture 2 on *Semiotics* in connection with the discussion on signs and meaning. The process of *coding* in qualitative data analysis for text or multimedia units also follows the same pattern.

The *schemata of experience* are determined socially, and at the same time biographically, through language acquisition and the socialization of the individual. Correspondingly, it gives all humans common schemata (like the breakdown of subjective time into past, present, future), group-specific schemata (like the „rules of the game“ of a family or the norms of a social strata), and individual interpretative patterns that are mine and mine alone. These can be drawn on in different combinations in order to interpret experiences and therefore for sense-giving.

Subjective sense-giving is the foundation for my world view. The actions of my fellow-men also only become meaningful and understandable for me when I classify their appearance, their movements and their linguistic expressions according to the schemata of my experience. What guides me here is the *idealization of the exchangeability of perspectives*, meaning that I essentially see the world as my fellow-men would if I were in their shoes.

What contexts of meaning actually enter my consciousness in any given situation depends on my *systems of relevance*. Schütz differentiates between *topical relevance* (What is the focus of a situation?), *interpretive relevance* (What aspects are thematized?) and *motivational relevance* (On account of what causes and for what purpose does a topic become meaningful?). In motivational relevance, the past and present reference of my motives are expressed: I do something *because* I have had certain experiences (*because-motive*), at the same time I act *in order to* achieve something (*in-order-to-motive*). The often neglected distinction between because and in-order-to-motives is especially important in qualitative research in case of (life) histories.

For Schütz, all relevance systems ultimately derive from the knowledge of the finiteness of our existence. This „*fundamental sorrow*“ („I know that I will die and I fear it“) ultimately shapes humans in all their hopes and fears, and pushes them to „master the world“ in their everyday actions (Schütz 1971, p. 262).

⁴ Modified after Legewie & Ehlers (1994, p. Lit. Lecture 1)

5. THE MULTIPLE REALITIES

Schütz' primary interest was in the paramount reality of the everyday. In phenomenological analyses like *The Stranger and the Homecomer* or *Don Quixote and the Problem of Reality*, he went beyond this and dealt with *altered states of consciousness*, or *multiple realities* as he called them, which deviate from the everyday reality (Schütz 1973). His question was: What distinguishes the everyday reality from the world of dreams and mania, or altered states of consciousness? What laws govern these multiple realities? How are the bridges between different realities experienced?

The following table shows a few examples of multiple realities:

MULTIPLE REALITIES

- Unexpected attentional shifts
- Holiday experiences, especially in a foreign culture
- Fantasy worlds: games, jokes, art, daydreams
- Sleep and dreams
- Worlds of mania
- Drug experiences
- Experiences with brain damages, dementia
- Sensory deprivation, meditation, trance, mystical experiences, hypnosis, ecstasy
- Religious beliefs, spiritual experiences
- Therapeutic experiences
- Scientific theoretical worlds
- Dying and death

Schütz worked from the observation that in many of these provinces of reality we can forget the everyday entirely, so as to dive into our own world with its own rules, so to speak. In each of these multiple realities, which he characterizes as *closed provinces of meaning*, there prevails a unique type of attention, a specific experience of space and time and a unique style of experience with its own logic and its own criteria of truth. Just think about the differences between waking, dreaming, spiritual experience, religious belief and the world of science.

We are mostly hardly aware when we are submersed in one of these realities. Diving back into the world of the everyday often comes with a „shock“ and a feeling of strangeness. Think, for example, of the moment when the curtain opens in the theater and we become entirely captivated by a strange world or when we wake up from a dream. Schütz speaks here of *small, medium or large transcendences* of our everyday experience - from the minimal „shock“ of being engrossed in a book and someone entering the room, to invasive changes caused by life crises and illnesses or the final transcendence that cannot be experienced, that of death.

6. SIGNIFICANCE FOR QUALITATIVE SOCIAL RESEARCH

The structures of the life-world described by *Alfred Schütz* might at first seem to be anemic self-evident facts, and you might be wondering how they are supposed to have any significance for qualitative research. As a sociologist of knowledge, Schütz' concern is certainly not to explore the psychology of this topic; he is concerned not with specific people but with our shared, taken-for-granted everyday knowledge, which is why he states in this context that he is talking of a „*social-scientific homunculus*“.

This homunculus (an artificial person) quite consciously suppresses key aspects of being human: his feelings and his „external“ and „internal distress“, i.e. social conditions and inner conflicts. All that is out of the ordinary is the „fundamental sorrow“, the fear of death, which *Schütz*, as a secret existentialist, assumes is behind all our motives...

The significance for the social sciences lies in the acknowledgment that, according to *Schütz*, when researching the social world, we are dealing not with simple objects, as in the natural sciences, but only ever with „theoretical“ objects, that is interpreted objects. Social science theories are therefore *second-order theories*, or theories about the (everyday) theories of thinking people. Three aspects here are particularly important for our topic:

1. The first section of this lecture was about the world of qualia and intentionality, directly accessible exclusively in the first-person perspective, and the world of intentionality which questions the fundamental accessibility of other minds. Here, *Schütz* points to a way out from the „lonely inner world“ of the individual by working out some fundamental prerequisites for inter-human communication: Communication is only possible thanks to the idealizing assumptions that my fellow-men would in essence perceive and experience our shared world similar to me if they were to take my place in it. In the following lecture on the *Theory of Communicative Action*, we will see how the conditions of the possibility of understanding the other, and even criteria for the success or failure thereof, can be developed from this.

2. *Schütz* emphasizes the cultural dependence of our world view with all its interpretative patterns, with culture also encompassing these schemata of everyday knowledge. However, the introspectively developed *Structures of the Life-World* (the title of Schütz' main work published posthumously by *Schütz & Luckmann 1973*) describes only the world view of a European social scientist from the middle of the last century. Every culture seeks its world view anew with its different interpretative patterns - even if certain basic assumptions may be anthropological universals common to all cultures. Even within our own cultural sphere, we find a large variety of different perspectives and interpretative patterns depending on social strata, milieu, sub-culture and minorities, all the way to closed communities, ideological groups, sects, and proponents of so-called conspiracy theories. Even institutions, associations, professional groups, families, couples and indeed every single individual forms their own interpretative patterns for each sub-province of their social life. Analyzing these specific interpretative patterns is an important objective in social research. *Schütz*' approach provides important concepts here, according to which dialogical qualitative research is about analyzing the relevant interpretative patterns

using communicative methods such as *ethnography*, *conversation* and *interview*, instead of introspection and phenomenological eidetic intuition. This is achieved directly in research which aims to *reconstruct everyday theories*, such as in health science research into *subjective illness theories*.

3. The process of *sense-giving* represents a model for the process of coding in qualitative research: In everyday life, I give an experience I have had its meaning by isolating it as such from my flow of consciousness using a reflexive attitude, and by classifying it according to preexisting personal or collective interpretative patterns. An analogous approach is used in the scientific interpretation of human artifacts which give us information on mental contents and processes, be they language texts, gestures, images, or works of art. In interpretation in the social sciences, we first identify units of meaning - just as we do with our subjective experiences using our reflexive attitude - and then assign interpretative patterns or theoretical concepts to them.

4. The concepts developed by *Schütz*, such as the different zones of the *subjective space*, the entanglement of *subjective time* and *calendar time*, the differentiation between different *systems of relevance* and the because and in-order-to motives can be used directly as categories for qualitative data collection and analysis.

5. The phenomenological analysis of the *multiple realities* and their internal logic ultimately provides background knowledge indispensable for interpreting the varied forms of representation for these more or less closed provinces of sense as we encounter them in dreams, in poetry, in the visual arts, and also in advertising or impromptu stories. We will come back to the different schemata of representation and their significance for qualitative research and data analysis in lecture 6 on *Texts as qualitative data*.

It should come as no surprise that qualitative research uses methods which at their core are found in the cognitive performances of everyday experience and everyday communication. After all, according to *Schütz* we are all everyday theoreticians. Field research, interviews, and group discussions are all based on systematized *everyday practices*, just as qualitative data analysis is. Social science theories differ from everyday theories specifically in this systematization and the associated quality control.

7. PROMPTS FOR DISCUSSION

- What is the world riddle of the qualia?
- What do we understand by intentionality? Significance for the social sciences?
- Discuss the concept of the life-world according to *Alfred Schütz*.
- Explain the interrelationship between subject time and calendar time using examples from your own life.
- What do we understand by the subjective sense of an experience or action and how can we describe the act of sense-giving?
- What do we understand by spatial, temporal and social centering of the first-person in the life-world?
- What are pragmatic motives? How do in-order-to and because-motives differ?
- What forms of relevance does *Schütz* differentiate? What is your opinion of the significance of the „fundamental sorrow“ in relation to the systems of human relevance?
- Discuss examples of „finite provinces of meaning“ (multiple realities) and how they differ from the paramount reality of the everyday.
- What is the significance of the structures of the life-world for qualitative social research?
- Explain the structural similarity of subjective sense-giving and coding in qualitative social research.

8. LITERATURE

du Bois-Reymond, E. (1874): Limits of our Knowledge of Nature. Popular Science Monthly Vol.5. https://books.google.de/books?id=LGXBxIOXsh8C&printsec=frontcover&hl=de&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Bunge, M. (2014): The Mind-Body Problem. A Psychobiological Approach. Elsevier: Amsterdam

Hastedt, H. (2021): Das Leib-Seele-Problem. Suhrkamp: Berlin

Käufer, S. & Chemero, A. (2015): Phenomenology: An Introduction. Polity Press: Malden (Mass.)

Schutz, A. (1964): Collected Papers. Studies in Social Theory. Springer Netherlands: Heidelberg

Schutz, A. & Luckmann, Th. (1973): The Structures of the Life-World. Northwestern University Press: Evanston (Illinois) https://en.wikisource.org/wiki/Popular_Science_Monthly/Volume_5/May_1874/The_Limits_of_our_Knowledge_of_Nature