

Does the Internet Change Past,
Present and Future? –
Empirical Survey Measures
for Germany and China

Maria Faust

*University of Leipzig, Leipzig, Germany,
maria.faust@uni-leipzig.de*

Abstract. Digital media have shown to alter how people deal with and plan time in everyday life. Quantitative research on the subject is scarce. In this paper, I address this by providing a survey design to measure temporal change in two cultural contexts, namely the German and Chinese one as they were previously two different temporal cultures which are now assumed to homogenize. Drawing upon a theory of habitualization, the theory of the social construction of reality and triadic causes I sketch how digital temporal change can be tackled through a bilingual questionnaire, i.e., German, and Simplified Mandarin, presented here in English. Internet-mediated communication is measured alongside personal factors, social and situative influences as independent variables. Temporal understanding as the dependent variable is a nine-dimensional construct, consisting of emic German and Chinese time notions.

Keywords: social time, cultural change, digital media, cross-cultural research, Germany, China

For citation: Faust, M. (2020), “Does the Internet Change Past, Present and Future? –Empirical Survey Measures for Germany and China”, *Folklore: Structure, Typology, Semiotics*, vol. 3, no. 2, pp. 130–158, DOI: 10.28995/2658-5294-2020-3-2-130-158

Меняет ли Интернет прошлое,
настоящее и будущее?
Эмпирические опросные измерения
для Германии и Китая

Мария Фауст

*Университет Лейпцига, Лейпциг, Германия,
maria.faust@uni-leipzig.de*

Аннотация. Цифровые медиа не впервые меняют то, как люди обращаются со временем и планируют его в повседневной жизни. Однако количественных исследований на эту тему крайне немного. В настоящей статье представлен дизайн опроса, позволяющего измерить темпоральные изменения в двух культурных контекстах: немецком и китайском; поскольку ранее они представляли собой две разные темпоральные культуры, которые в настоящее время, как принято считать, гомогенизировались. Опираясь на теорию габитуализации, теорию социального конструирования реальности и триадную взаимную причинность, автор обрисовывает, как к цифровым темпоральным изменениям можно подойти посредством двуязычного опроса, к примеру, на немецком и на упрощенном мандарине, который в настоящей статье приведен по-английски. Опосредованная Интернетом коммуникация измеряется наряду с личными факторами, социальными и ситуативными влияниями как независимыми переменными. Темпоральное понимание как зависимая величина – девятимерный конструктор, состоящий из эмных немецких и китайских понятий времени.

Ключевые слова: социальное время, культурные изменения, цифровые медиа, кросскультурные исследования, Германия, Китай

Для цитирования: Фауст М. Меняет ли Интернет прошлое, настоящее и будущее? Эмпирические опросные измерения для Германии и Китая // Фольклор: структура, типология, семиотика. 2020. Т. 3. № 2. С. 130–158. DOI: 10.28995/2658-5294-2020-3-2-130-158

Introduction

Research on social time and temporal change in society across all social sciences and humanities very often faced peaks when new technologies have entered the realm of society. Initially, framed within an industrialization discourse, another peak occurred in the fifth decade of the 20st century [e.g., Innis 2004], and eventually in the late 1990s/early 2000s [e.g., Beck 1994; Castells 2010; Rosa 2005] and finally a more recent surge ever since the ubiquitous rise of digital

media [e.g., Sharma 2014; Wacjman and Dodd 2016; Lei and He 2010]. With the smartphone as the most used internet device in economically strong, as well as growing and developing countries, e.g., Germany and China [China Internet Network Information Center 2020; Projektgruppe ARD/ZDF-Multimedia 2020], people are constantly connected, always-on, increasingly digitally available and producing digitally influenced ‘temporal patterns’ where previously culturally different patterns used to be the norm. At the same time, quantitative empirical research on digitally mediated temporal change is scarce [e.g., Hand and Gorea 2018; Görland 2020] or limited to time budget studies. Therefore, I aim to operationalize digital temporal change through a survey design, enabling future researchers to carry out more differentiated quantitative studies addressing this research desiderate. Thus, the following research question arises:

How can the influence of internet-mediated communication on temporal understanding be modeled through a survey design when comparing German and Chinese cultural context?

Temporal understanding will be understood as a concept that focuses on both individual and social sense and meaning making processes relating to time. Because ‘social time’ and ‘time’ lack a clear terminology, I introduce the concept of ‘temporal understanding’ which will be defined as

a human category of time which is individually undertaken but socially constituted. It encompasses the act of standardizing two or more events of which at least one must be progressing and is used as reference system in order to relate the other event(s) to it. This relation constitutes the interdependent levels of time horizon and dealing with time [Faust 2016, p. 9, based on Elias and Schröter 2005; Helfrich-Hölter 2011].

Internet-mediated communication, in contrast to the broader terms ‘digital’ or ‘online communication’, refers to all forms of human-to-human or human-to-machine communication that encompass sense and meaning making process with understanding on the internet. Finally, the two cultural contexts, defined as the contextualization of culture, i.e., the cultural level of investigation, are picked because Germany and China are two deeply different examples when it comes to the way they deal with and plan time. Earlier studies have shown that they can be placed at each end of the temporal spectrum, with Germany being usually considered low-context, monochronic and future-oriented [Hall 1984; Hofstede 2012]. With regards to time, China on the contrary is high in polychronicity, trust serves as underlying value to establish future relationships [Helfrich-Hölter 2011] and is moreover high in pace these days predominantly due to its growing urban areas [Levine

and Norenzayan 1999]. Even though, the works of earlier scholars have not remained un-criticized (e.g., the works Fang, 2003 on future and past orientation), a most-different-system can be applied [Anckar 2008] here. Moreover, China is on the forefront of the digital world – and thus, serves an ideal example for a hyper-mobile digital internet context. Finally, while qualitative research can investigate in-depth structures of individuals, quantitative research is capable of explaining and showing patterns of temporal change. Time policy [Reisch 2015] has become a central issue in global politics. Yet, at the same time, if there is no empirical proof for an accelerated, fast-paced society with short-term temporal horizons, such policy measures can neither be evidence-based nor be enforced. Therefore, we seek to present a valid and reliable cross-cultural survey instrument for Chinese and German cultural context to investigate the homogenization of temporal change [Krotz 2001, p. 204] due to an increasingly connected world and digital media as agents of these processes.

At first, the theoretical model of temporal change will be introduced [Faust 2016]. Based on the model and a triadic theory for empirical operationalization [Früh, Schulze, and Wünsch 2002], I then move to the central constructs of the survey. From both frameworks, the bilingual survey questionnaire with scales in German and Simplified Mandarin can be derived. The questionnaire will be provided in English with references to both target languages, and then an outlook is given.

1. Model of Change of Temporal Understanding

The model has four integral components to explain individual and cultural change. The components are as follows: similarity, functional equivalence, the development of habits, and in the subsequent step, cultural change through institutionalization, objectification, and legitimating. The theories that underlie this model are first, theories of habit formation [Koch 2010, p. 44] and the theory of the social construction of reality [Berger and Luckmann 2010]. Two pre-conditions – similarity and functional equivalence – are the base for these processes and are defined as follows:

Similarity means that internet-mediated communication situations occur on a regular basis and under the same circumstances and generally take place in one cultural context yet occur in both German and Chinese cultural context.

Functional equivalence means that situations and internet use, i.e., selection and reception processes, are comparable in both German and Chinese cultural context [Faust, 2016, p. 11].

Selection and reception processes can be one- or two-sided. In the latter case, internet users are acting as prosumers. Regardless of their dual role as prosumers, the reception still takes place, in the case of interpersonal communication on both ends. Under these two pre-conditions, habits develop. They are then defined as “knowledge structures, which are learned through regular repetition and trigger a certain automated behavior (and the mental processes connected to it) when ‘indicative cues’ appear” [Koch 2010, p. 44]. Such indicative cues, i.e. triggers, are the reason for habit development: certain sites, apps or functionalities on the internet appear to nudge the online user to go online more frequently, or are selected by rational behavior or certain use motives. According to Koch, habits are learned through repetition [Koch 2010, pp. 31–41]. The individual, i.e., micro level is then crossed to cultural change [Berger and Luckmann 2010]. Institutionalization in the first step refers to establishing such habitualized behavior. Foreseeing the action of others, interpersonal or mass mediated, is crucial to this process [Berger and Luckmann 2010, 60ff.; Früh, 1991]. Finally, institutionalization is completed when social roles are passed on to future generations that reach beyond the individual behavior of two actors [Berger and Luckmann 2010, p. 63]. The final step then consists of objectification and externalization, implying that knowledge has been passed on to the younger generation. The whole process is visualized in Figure 1.

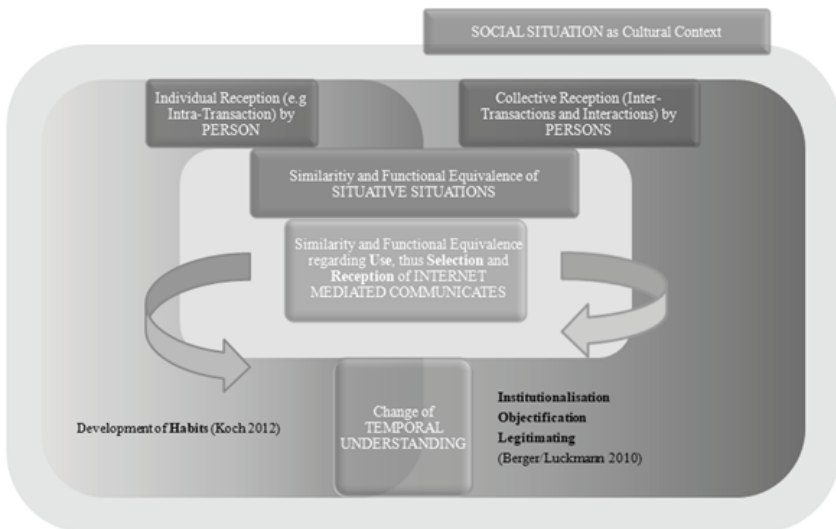


Fig. 1. General Model of Change of Temporal Understanding
[Faust 2016, p. 15]

2. Triadic Causes: Derivation of Key Constructs

Following, we seek to elaborate on one part of the theory of TV entertainment [Früh et al. 2002], namely the triadic fitting, which will be referred to here as triadic causes as the interaction between the triadic variable groupings originally elaborated in the theory is not relevant here. Triadic causes consist of three core constructs: *media offer, person and situation* [Früh 2003a, p. 17]. *Media offer* here transcends the original meaning in the theory of TV entertainment, and refers to all communication means a person makes use of. Thus, we would like to refer to it as medium in the following. *Person* as a cause refers to all relevant factors that deal with the characteristics of an individual. *Situation* comprises both *situative* and *social* factors surrounding the individual in its context which influence digital media use or non use.

While the model of the triadic causes was developed within the context of the theory of TV entertainment [Früh et al. 2002], it still holds an advantage for internet use phenomena with some alterations. The theory is explicitly suitable for the description of a diversity of reception phenomena [Früh et al., 2002 p. 143; Gehrau 2003, p. 69]. Even in times of digital media, the triadic causes still hold valid: media

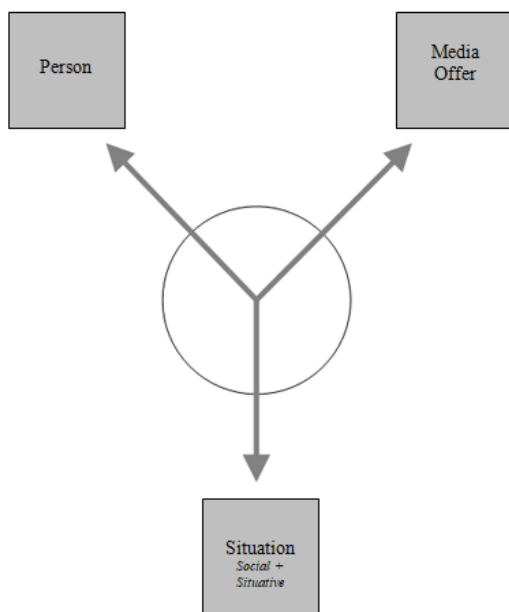


Fig. 2. Altered and Simplified Model of Triadic Causes [Früh 2003b, p. 40]

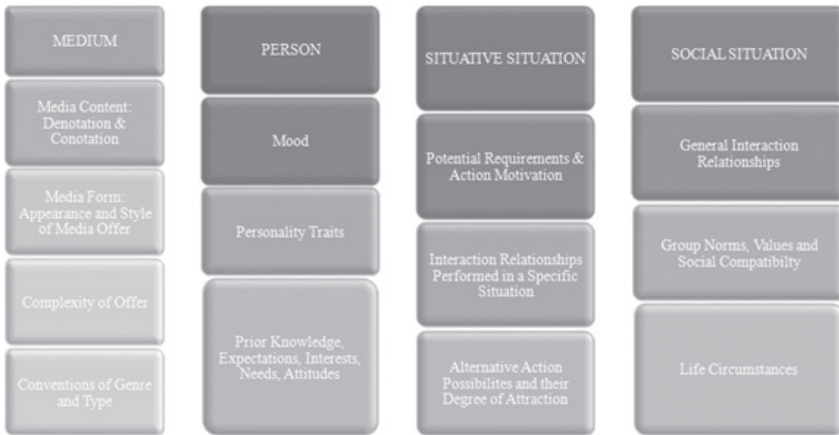


Fig. 3. Suggested Key Constructs of Triadic Causes [Früh 2003b]

effects and individual and cultural change can only be explained through a multi-causal setting. Thus, I re-conceptualized the triadic causes in such a way as medium as to include traditional (mass) media besides online offers that may be either produced by journalists, or, by prosumers, and moreover in this paper even the internet as a network infrastructure.

As Früh suggests, the three core causes, i.e., constructs, can be treated as modules and thus need individual specification, i.e. should be considered on the side but not entirely left out [Früh et al. 2002,



Fig. 4. For Research Purposes Selected Key Constructs of Triadic Causes

p. 143]. As can be seen in Figure 2 before, there are four key causes: medium, person, and situation, which split into situative and social situation [Früh et al. 2002], which are listed in more detail in Figure 3.

The following Figure 4 explicates the relevant core independent constructs, i.e., variable groupings for the paper and with it the operationalization model, with reasons for the related selections to be found in the remainder of the paper. The independent variable temporal understanding is explained in the last part.

3. Empirical Operationalization

Here, the triadic causes and temporal understanding with resp. measurements are presented. Since both German and Chinese survey items had to be considered, this sometimes meant to accept “weaker” scales regarding reliability and validity in favor of more accurate multilingual translated scales [Harzing, Reiche, and Pudielko 2013]. However, for some scales, back-translation was applied to develop new scales where no construct-matching instruments were found [Rippel and Seipel 2008].

3.1. Medium

Früh suggests the denotative and connotative media offer as well as appearance and style of media offer as first two sub causes of the medium (see Fig. 3). Both sub-causes are left out because they are based on the individual reception processes only, not cultural change. The complexity of offer was operationalized as general media use and internet use. Genre and type conventions were first operationalized as media credibility, but left out during pretesting, as it is more likely to be subordinated to a specific communicate. Thus, the cause medium eventually consists of media use, internet experience, duration of internet use, internet concerning mass-mediated, interpersonal and service communication, and the construct relating to habits [Koch 2010]: internet use styles. These sub-causes of the construct cover the complexity of the offer, which Früh suggested [Früh et al. 2002]. Internet-mediated communication as internet use features interpersonal and mass-mediated communication as well as service features, which do have human or bot communicators.

3.1.1. General Media Use

The sub-cause general media use consists of 20 items which were developed in a group discussion considering cultural differences in both cultural contexts. They were cognitively pretested and eventually translated into simplified Chinese.

3.1.2. Internet Use

Items were developed to measure internet use, internet experience, and duration of internet use in German and they were eventually translated into Simplified Chinese. Internet use consists of ten items each for measuring interpersonal communication, measuring mass-mediated communication and service-oriented communication. These internet activities questions were developed within a group discussion and cognitively pretested in both target languages. To comprehend the activities carried out online such as using instant messaging and the like, country-specific examples of websites and apps were provided for both Germany and China in the final questionnaire. As group discussants were of German descent and young adult internet users, participants based the examples on their own user experiences. For the Chinese questions, a Chinese native was consulted, and additionally, website and app examples from Kantar Media CIC study were taken into consideration [Kantar Media CIC 2018].

3.1.3. Internet Use Styles

Key to the understanding of individual change in temporal understanding are habits [Koch 2010], where Schweiger's work on use styles seems an appropriate measure for this. Schweiger states that the idea of use styles "allows it to include publicly discussed media use phenomena such as increasing selection frequency or lack of reception thoroughness in larger societal relations, such as the sociological or cultural acceleration debate (see also [Borscheid 2004; Geißler 2000; Henckel, Bender, Haeffner, and Geißler 2000])" [Schweiger, 2006, p. 310, translated by Faust]. Schweiger defines individual use styles as "general, across situations functioning *modi operandi*, ...which a person *preferably* utilizes regarding a medium genre" [Schweiger 2005, p. 175, translated by Faust]. These use styles are habits of users. Such habits are cemented routines which are essential for cultural change [Faust 2016; Koch 2010] and were initiated by indicative cues at the beginning. According to Schweiger, use episodes and use styles have a close relation to each other, but not a causal relationship. Use styles develop as a substrate or first order abstraction due to media use episodes. They are closely related to media genres [Schweiger 2006, p. 292]. Schweiger adds that use episodes follow certain use patterns, habits, styles, or schemata. Therefore, it can be linked to Koch who defines habits as schemata [Schweiger 2006, p. 291]. Now, these use styles may be applied across a variety of media genres. In this case, I apply it to internet use due to the formulated research question. In Table 1, his temporally relevant items are discussed and, if altered or developed, it is indicated.

Table 1

Overview of Selected Internet Use Style

Nb.		Item	Dimensional Base
1	Copied	While I am online, I carry out other activities (e.g., eating, calling, watching TV) [Schweiger 2005, p. 184]	The qualitative degree of reception, i.e., attention and intensity of reception [Schweiger 2005, p. 180]
2	Modified	Most of the time I leave several browser windows/apps open. [Schweiger 2005, p. 185]	Parallel use of offers (intra-medial) [Schweiger 2005, pp. 181–182]
3	Modified	I save interesting articles, e.g., as book marks or I print them or take screenshots. [Schweiger 2005, p. 185]	Collecting information [Schweiger 2005, p. 181]
4	Modified	Weekdays I am always online during the same time of the day. [Schweiger 2005, p. 185]	Temporal habits, i.e., media structuring time [Schweiger 2005, p. 181]
5	Developed	I tend to answer messages immediately.	The quantitative use of offers as „measurable temporal duration of reception phases and potential short breaks” [Schweiger 2005, p. 180, translated by Faust]
6	Developed	I often go to certain apps/websites in short intervals to check if there is anything new.	Quantitative use of offers as “measurable temporal duration of reception phases and potential short breaks” [Schweiger 2005, p. 180, translated by Faust]
7	Developed	I often switch between different browser apps/windows/tabs.	Parallel use of offers (intra-medial) [Schweiger 2005, pp. 181–182]
8	Developed	After I am done with my plans and duties on the internet, I continue looking for other appealing information/things.	Follow-up reception – new style
9	Developed	When I am online, I tend to look for information systematically and do not click randomly.	Decision quality, i.e., the decision of reception after checking for alternatives [Schweiger 2005, p. 178]
10	Developed	When I visit familiar websites, I always follow the same order to check the content, e.g., reading sports news first on online news sites.	Order of evaluation, i.e., the user decides the order of information during the communicative phase himself [Schweiger 2005, pp. 178–179]

As seen in Table 1, such internet use styles were picked that seemed especially crucial to the change of temporal understanding.

3.1.4. Media Access

For media access, respondents were asked which kind of internet access they use, i.e., DSL, cable, mobile access or other.

3.2. Person

Person key constructs are mood, personality traits, and knowledge (see Fig. 3). Although it is suggested that mood is imperative for the development of habits [Koch 2010], it precedes the actual cumulative reception processes and was left out. Thus, only the Big Five personality traits, media competence and socio-demographic characteristics were selected.

3.2.1. Big Five Personality Traits

The personality traits were operationalized as Big Five. Studies have shown that social time relates to personality traits with the Big Five at the forefront. To maintain validity, reliability and at the same time, a reduced demand in answering the questions the Ten-Item Personality Inventory (TIPI) was chosen ([Gosling, Rentfrow, and Swann, 2003], Huang [Huang 2014] for Chinese translation, Muck, Hell and Gosling [Muck, Hell, Gosling 2007] for German translation).

3.2.2. Media Competence

For media competence, I follow Baacke who defined it as one's application of media, which is dependent on age as well as the social environment [Baacke 1996]. Baacke developed four sub-causes of media competence:

- first, media use as an adequate action with media of all kind, both technical and pro-active, individual use;
- second, media design as innovative and creative potential to develop media;
- third, media knowledge as a certain kind of knowledge about media, their development and functional logics;
- fourth, he subsumes analytical and reflective skills to engage critically with media under media critique [Baacke 1996].

The first sub-cause media use was omitted from the study as it appears more differentiated in the other parts of the questionnaire. For each of the three remaining sub dimensions, two items were selected from Lü's quantitative study on media competence of Chinese students

at Chinese universities [Lü 2008, p. 5] as they were available in both German and Chinese [Lü 2006] and used Baacke's model, which was developed in Germany but simultaneously applied to Chinese context. During group discussions I updated all items from the survey of the late 2000s. Eventually, cultural adjustment, reconstruction, and rephrasing were used to finalize the items, with the revised version presented in Table 2.

Table 2

Overview of Media Competence

Nb.	Item	Dimensional Base
1	I can send extravagant data (e.g., pictures, Word Documents, PDF-Files, videos), to make others happy.	media design
2	I participate in online journalism.	media design
3	I am aware that everything I publish on the internet will be stored.	media knowl- edge
4	I am able to use a newly bought device (e.g, smart-phone, and tablet) independently after a while.	media knowl- edge
5	I question what I find on the internet and consider the consequences.	media critique
6	I support younger generations in critically using the internet.	media critique

3.2.3. Socio-Demography I

The socio-demographic variables were individually developed and translated into German and simplified Chinese: sex/gender, age, amount and type of languages, ethnicity, kind and number of languages spoken, nationality to cross-check for target population, ethnicity, place of origin and years inside the target country as well as the Hukou (户口制度) for the Chinese respondents only.

3.3. Situative Situation

The situative situation is particularly relevant for individual reception phases. However, here both reception motivation, i.e., reasons for a specific reception, and alternative actions, i.e., other choices of what to do, had to be *abstracted* and related to an *average* reception situation to specify individual and cultural change.

As interaction relationships are indicated in the triadic causes in both situative and social situation according to Fröh [Fröh 2003b], they were subsumed to social situation to pay tribute to the non-immediate social character. Thus, the key construct situative situation refers to functional alternative options internet respondents may consider in their leisure time, i.e., what else people do apart and/or instead of being online. Moreover, motives for non-internet use suggest the reasons for not being online (anymore) were considered. It is long known that motive questions in the tradition of the Uses-and-Gratifications Approach serve as long-term indicators due to measurement problems in the actual reception situation [Schenk 2002]. However, while not being able to investigate the actual functional alternatives during a specific reception situation, I suggest such general motives and general leisure activities to be bridging the micro to the macro level to cultural change.

3.3.1. Spare Time Activities and Its Restrictions

Here, commercial studies proved helpful, one for teenagers and young adults by Shell [Albert, Hurrelmann, Quenzel, and TNS Infratest 2015] and one by the Foundation for Questions of the Future [Reinhard 2016]. This sub-cause was complemented by a study by Zhou, Fong, and Tan [Zhou, Fong, Tan 2014] to cover the Chinese context. Second, all three studies were compared and categories were deductively formed, with the following categories deducted: social activities, physical activities, cultural activities, calming/relaxing activities, travelling, and others. Third, double items and items that were specific for one culture were omitted. The final merged list consists of 23 items in total. Restrictions were measured as follows: health restrictions, network of contacts lives far away, caretaking of another person, demanding job, financial reasons, and lack of skills.

3.3.2. Motives of Internet Non-Use

To survey internet non-users on their non-use as the experimental control group, the focus was literature research on studies targeting the general population not a specific target population, e.g., elderly people. Items from four studies (namely [Blank 2013; Papsdorf et al. 2018; Perlot 2012; Zickuhr 2013]) were considered robust and complemented by qualitative interviews with non-users. Generally, non-users can be distinguished between former internet users and never-before internet users. After such an initial filtering question, four reasons of non-use can be differentiated: 1) lack of technical and financial means, 2) health-related reasons including cognitive overload, stress and lack

of media competence, 3) lack of relevance and suitability to life, 4) and moral reasons including fear of addiction. Translations with a back-translation process and pre-testing followed.

3.4. Social Situation

The social situation is the greater environment people live in with the resp. German and Chinese cultural context being part of it. This dimension splits into communication network and related to it the used media in the network. Moreover, the culture dimension individualism/collectivism is measured, as Chinese and German on-liners stem from two ends of this dimensional spectrum [Triandis 1995]) and is theoretically linked to the cultural context. Finally, social desirability as sub-cause is mandatory for Asian contexts as Chinese respondents have different response patterns [Harzing et al. 2013, p. 129]. Socio-demographics on a meso level complete the social situation.

3.4.1. Communicative Network

Originally based on Granovetter [Granovetter 1973], more recently Fuhse and Stegbauer [Fuhse, Stegbauer 2011], and Hepp, Krotz, Moores and Winter [Hepp et al. 2006] highlighted the interrelation between communication networks, media and culture for the realm of network theory. For the questionnaire, the communicative network is conceptualized as an ego-centered network with six alters (see Table 3 below). Both structural and relational perspectives are merged – first, people are asked to list the people they stay in touch with and second, they are supposed to class them as strong or weak ties. The derived matrix was therefore developed in group discussions and took cultural differences in Germany and China into account, i.e., the grouping of the network members into the three categories family, friends and others. Pretesting followed [Prüfer and Rexroth 2008].

Table 3

Matrix of Communication Network

- 1) Please fill in the first names or nicknames of the persons in the table below which you entered in the question before.
 - 2) Please differentiate between family members, friends, and others. Your four to six persons may also belong to only one group of persons.
 - 3) Please also decide whether these persons live inland or abroad.
 - 4) Finally, please rate these people according to what they mean to you in your life. You may rate from very important to less important.
- Note: You can put more than one person in one box!

		Very important	Important	Less important
Inland	Family (Family members, Relatives, Partners)			
	Friends (Close Friends, Acquaintances)			
	Others (Colleagues and Co-workers, Neighbors)			
Abroad	Family (Family members, Relatives, Partners)			
	Friends (Close Friends, Acquaintances)			
	Others (Colleagues and Co-workers, Neighbors)			

3.4.2. Media for Communication Network

The sub-cause media for communication network consists of 11 pre-set items and an additional free one which was developed in a group discussion with five people considering cultural differences in both German and Chinese cultural context. They were cognitively pretested [Prüfer and Rexroth 2005] and eventually translated into simplified Chinese. It is assumed that the more internet-mediated media are being used for each network member, the more likely a shift in temporal understanding occurs [Vorderer, Krömer and Schneider 2016].

3.4.3. Culture Dimensions: Individualism/Collectivism

The construct collectivism consists of four sub-causes according to Triandis and Gelfland [Triandis and Gelfland 1998, p. 118]: “1) definition of the self, which can emphasize personal or collective aspects, 2) personal goals that can have priority over in-group goals or vice versa, 3) emphasis on exchange rather than communal relationship, or emphasis on rationality rather than relatedness, and 4) importance of attitudes and norms as determinants of social behavior”. In total, the scale consists of sixteen items, eight for each culture dimension. Moreover, they differentiate between vertical and horizontal individualism and collectivism. They define it as following “horizontal patterns assume that one self is more or less like every other self. By contrast, vertical patterns consist of hierarchies, and one self

is different from other selves" [Triandis and Gelfand 1998, p. 119]. Studies have shown that the scale holds true for Asian contexts as well [Lalwani, Shavitt, and Johnson 2006]. As the scale by Triandis and Gelfand [Triandis and Gelfand 1998, p. 120] was only published in English, translation processes were mandatory. For German, two native speakers translated individually and blended the results in a group discussion process. For Chinese, a native speaker translated the scale and two native speakers back-translated it.

3.4.4. Social Desirability

For social desirability, Palhus [Palhus 1984] distinguished between self-deception enhancement and impression management. The former is based on egoistic tendencies and refers to the underlying idea that the respondent has a better perception of him- or herself, whereas impression management is the intentional will to modify answers in an interview to impress with the answers given [Palhus 1984]. Here we suggest the short scale of the Balanced Inventory of Desirable Responding (BIDR) by Paulhus, which Steenkamp, Jong and Baumgartner [Steenkamp, Jong and Baumgartner 2010] translated into Chinese and German.

3.4.5. Socio-Demography II

The questions, translated in both target languages, consist of the following underlying variables: the degree of urbanization, household size, and household income. The degree of urbanization has also been shown to have a significant influence on pace of life [Levine and Norenzayan 1999, p. 194].

3.5. Temporal Understanding: the way we deal with time and plan in Germany and China

The construct temporal understanding, the nine-dimensional independent variable, is the most complex construct in the questionnaire. When trying to operationalize it, there is a core validity problem: it is both an individual and a cultural construct and therefore comprises micro, i.e., individual, meso, i.e., organizational, and macro, i.e. societal, level phenomena. Former cross-cultural comparative research on time has shown that meso and macro levels were rarely considered. One exception is the GLOBE-Study carried out by House et al., who define as is-states as values and should be-states as norms [House 2004]. They use this approach to do so for all the culture dimensions

they consider, including the time dimension. However, the construct temporal understanding suggested here is more comprehensive, as it is both individual and cultural. One of the reasons why House et al.'s approach is not suitable is that both values and norms do not consider the micro level as they do not refer to the individual. In the previous part I suggested that habits are essential to cultural change – without the formation of new habits through internet-mediated communication neither roles change nor institutionalization takes place. Based on previous work [Faust 2016] I suggest temporal understanding as sketched in Fig. 5:

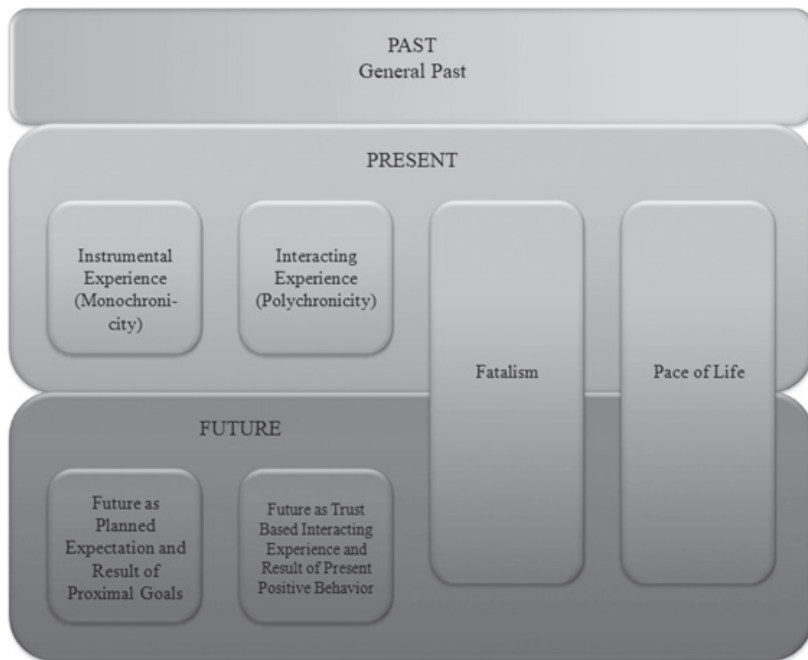


Fig. 5. Model of Temporal Understanding [Faust 2016, p. 9]

The nine above mentioned sub-causes are defined as follows:

- i. *Past* defines as classifying personal and social events as former and relation towards these events.
- ii. *Present* defines as classifying personal and social events as ongoing and dealing with these ongoing experiences to help to give order, coherence, and meaning to those events.
- iii. *Future* defines as classifying personal and social events as prospective and relating these to the current situation through different means to help to give order, coherence, and meaning to these events.

iv. *Instrumental Experience (Monochronicity)* is based on classification acts and implies the extent to which people in a culture prefer to do one task at a time and believe their preference is the best way to do things.

v. *Interacting Experience (Polychronicity)* is based on classification acts and implies the extent to which people in a culture prefer to be engaged in two or more tasks or events simultaneously and believe their preference is the best way to do things.

vi. *Fatalism* is based on the classification act but lacks active engagement in tasks or events as the future is predestined and not influenced by individual action and has thus to be accepted.

vii. *Pace of Life* is based on classification acts and implies the extent to which people prefer tasks or events to be close together, i.e., immediate follow-up events.

viii. *Future as Planned Expectation and Result of Proximal Goals* is based on classification acts and implies an either transactional relationship between present ideas and envisioned long-term tasks and events or a focus on proximal goals in the belief they add up to long-term goals.

ix. *Future as Trust-Based Interacting Expectation and Result of Present Positive Behavior* is based on classification acts and implies positive outcomes of tasks and events due to balanced interaction in the present” [Faust 2016, pp. 9–10].

For operationalization Usunier’s and Valette Florences’ Times Styles Scales proved particularly helpful [Usunier und Valette-Florence 2007]. Second, the Inventory of Polychronic Values by Bluedorn et al. [Bluedorn et al. 1999] and Zimbardo’s Time Perspective Inventory (2012/2013) was used [Zimbardo 2013]. Third, the Philadelphia Mindfulness Scale was researched and is suggested for use here [Cardaciotto et al. 2008]. Finally, Strathman’s Consideration of Future Consequences Scale [Strathman 2010b, Strathman 2010a] completed operationalization (see final application of the scales to temporal understanding in Figure 5). For the sub-cause ‘future as trust-based expectation and result of present positive behavior’ new items were conceptualized. All authors – except for Cardaciotto et al. and Strathman et al. – argue on a theoretical level and partially on an operational level that time is a social construct. This argument does not solve the previously discussed validity question entirely; however, it reduces the risk of arguing on a micro level only. Usunier und Valette-Florence, for example, state that “the concept of time is a social construction that is subjective both collectively and individually” [Usunier und Valette-Florence 2007, p. 336]. They emphasize that both anthropology and experimental psychology have their share that time

is considered “partly internal and partly external to the individual” [Usunier and Valette-Florence 2007, p. 338]. Therefore, their time concept is “multidimensional, negotiated between the individual and the environment, and framed by the dominant time patterns in a given society” [Usunier and Valette-Florence 2007, p. 338]. Zimbardo and Boyd argue similarly when they write that time perspective is a “foundational process in both individual and societal functioning” [Zimbardo and Boyd 1999, p. 1271]. They define time perspective as “often non-conscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence and meaning to those events” [Zimbardo and Boyd 1999, p. 1271]. Bluedorn et al. [Bluedorn et al. 1999] define polychronicity. Here, as a part of the temporal understanding, it was defined as ‘interacting experience’ as a cultural construct. In this sense, they emphasize the macro level and operationalize accordingly. They state: „As a cultural variable then, I define polychronicity as the extent to which people in a culture: 1) prefer to be engaged in two or more tasks or events simultaneously; and 2) believe their preference is the best way to do things” [Bluedorn et al. 1999, p. 207]. Their definition includes preferences and beliefs and targets both values and norms. It, therefore, relates strongly to a great extent of culture definitions [e.g., Kroeber and Kluckhohn 1963]. Finally, I introduce the definition of time by Strathman et al. They see it as a micro level phenomenon when they write:

...CFC refers to the extent to which individuals consider the potential distant outcomes of their current behaviors and the extent to which they are influenced by these potential outcomes. It involves the intrapersonal struggle between present behavior with one set of immediate outcomes and one set of future outcomes. Whether particular individuals resolve this dilemma between present and future in favor of one or the other is hypothesized to be a relatively stable characteristic [Strathman, Gleicher, Boninger, and Edwards 1994, p. 743].

The next sub-cause is ‘future as trust-based interacting expectation and result of present positive behavior’. Regardless of intensive research, no tested scales could be found. Due to a lack of scales, items were developed on the basis of the Chinese Value Survey [Chinese Culture Connection 1987]. Other than the rest of the items used from tested scales, the items do not directly relate to time. Yet, in its complexity, they represent a lifestyle that secures harmonic interaction. Future then turns out to be the result of present positive behavior. In this sense, they represent a phenomenon particularly prominent in Chinese culture. Unlike previous scholars such as Hofstede [Hofstede 2001], I provided a theoretical framework first and then looked at various

values which serve as a framework to underlie this idea. Dimension ix. is therefore based on values 3 容忍 (tolerance of others), 4 随和 (harmony with others), 8 礼尚往来 (reciprocation of greetings, favours, and gifts), 26 报恩与报仇 (repayment of both the good or evil that another person has caused to you), 30 信用 (trustworthiness), 33 安分守己 (contentedness with one's position in life) and 35 要面子 (protecting your "face"). The operationalized items for this sub-cause can be found in Table 4 below. Various pre-testing techniques [Prüfer and Rexroth 1996; Prüfer and Rexroth 2008], e.g., cognitive interviews [Prüfer and Rexroth 2005], were used as well as back-translation processes [Harzing et al. 2013; Rippl and Seipel 2008].

Table 4

Overview of Operationalized Sub-cause 'Future
as Trust-based Interacting Expectation
and Result of Present Positive Behavior'

Item Nb.	Item	Value Base
Item 1	I am satisfied with my current life situation within my network of friends and family.	33 安分守己 Contentedness with one's position in life [Chinese Culture Connection 1987, p. 148]
Item 2	When a friend or family member does me a favor, it is imperative for me to return it on the next occasion.	8 礼尚往来 Reciprocation of greetings, favours, and gifts [Chinese Culture Connection 1987, p. 147] 26 报恩与报 Repayment of both good and the evil that another person has caused you [Chinese Culture Connection 1987, p. 147]
Item 3	I try carefully not to expose my friends and family.	35 要面子 Protecting your "face" [Chinese Culture Connection 1987, p. 148]
Item 4	It is important to me to not have conflicts with my family and circle of friends.	4 随和 Harmony with others [Chinese Culture Connection 1987, p. 147]
Item 5	It is important to me to live in harmony with friends and family.	4 随和 Harmony with others [Chinese Culture Connection 1987, p. 147]
Item 6	It is important to me to be tolerant towards friends and family.	3 容忍 Tolerance of others [Chinese Culture Connection 1987, p. 147]
Item 7	I would describe myself as a trustworthy person among friends and family.	30 信用 Trustworthiness [Chinese Culture Connection 1987, p. 147]

Table 5 presents all sub-causes of the construct temporal understanding and their operationalization. The Time Style Scales [Usunier and Valette-Florence 2007] was the core basis, with the Chinese translation from a previous study¹ and a German back-translation process [Harzing et al. 2013; Rippl and Seipel 2008]. Moreover, Zimbardo's Time Perspective Inventory [Zimbardo and Boyd 1999] (see also [Mifont and Bieniok 2008; Wang et al. 2015], the psychometric scale Consideration of Future's Consequences [Strathman 2005; Strathman 2010b, Strathman 2010a], the Inventory of Polychronic Values [Bluedorn et al. 1999] (both German and Chinese back-translated [Harzing et al. 2013; Rippl and Seipel 2008]), the Philadelphia Mindfulness Scale [Cardaciotto et al. 2008] with back-translations to both German and Chinese [Harzing et al. 2013; Rippl and Seipel 2008] and an individually developed scale with the same translation procedure are used.

Table 5

Overview
of Operationalized Construct Temporal Understanding

Sub-cause	Theoretical Base	Number of Items
Past	Time Styles Scale (TSS): General Past [Usunier and Valette-Florence 2007]	4
Present	Philadelphia Mindfulness Scale (PHLMS): Awareness [Cardaciotto et al. 2008]	10
Instrumental Experience (Monochronicity)	TSS: Tenacity: 3 Items [Usunier and Valette-Florence 2007] TSS: Economic Time: 4 Items [Usunier and Valette-Florence 2007] TSS: Submissiveness: 4 Items [Usunier and Valette-Florence 2007] Inventory of Polychronic Values (IPV): 5 Items [Bluedorn et al. 1999]	16
Interacting Experience (Polychronicity)	TSS: Non Organized Time: 3 Items [Usunier and Valette-Florence 2007] Inventory of Polychronic Values: 5 Items [Bluedorn et al. 1999]	8

¹ Prof. J.-C. Usunier, personal communication, November 25, 2013.

Fatalism	TSS: Time anxiety (perceived usefulness of time): 4 Items [Usunier and Valette-Florence 2007] Zimbardo Time Perspective Inventory (ZTPI): Present-Fatalistic: 9 Items [Zimbardo and Boyd 1999]	13
Pace of Life	TSS: Preference for Quick Return [Usunier and Valette-Florence 2007]	3
Future	TSS: General Future [Usunier and Valette-Florence 2007]	4
Future as Planned Expectation and Result of Proximal Goals	Consideration of Future Consequences (Strathman 2005)	12
Future as Trust-based Interacting Expectation and Result of Present Positive Behavior	Developed Scale (see Table 4)	7

Last but not least, because the Inventory of Polychronic Values is combined with the Time Styles Scale, the sub-causes ‘instrumental experience’ and ‘interacting experience’ are validly and completely operationalized (see validity discussion above). Thus, it can be concluded, that ‘past’, ‘present’, ‘future’, ‘future as planned expectation’ as well ‘fatalism’ and the ‘pace of life’ are just operationalized on the micro level. Only ‘interacting experience’ and ‘instrumental experience’ as well as ‘trust-based interacting expectation’ are completely and validly operationalized. At least on a theoretical level referring to the definitions, the situation looks slightly different: only ‘future as planned expectation’ and ‘present’ is not theoretically defined with time as a social phenomenon, whereas the other dimensions are defined socially. Thus, it can be concluded that the term temporal understanding is, with some limitations, operationalized as a social one.

4. Critique and conclusion

Finally, structuring the questionnaire should consider the general survey rules for the running order of questions [Möhring and Schlütz 2010] and the logic of cross-cultural survey design [Rippl and Seipel 2008] with its challenges [Harzing et al. 2013], e.g., construct equivalence following a de-centralized approach [Harkness et al. 2003].

The outlined operationalization afore brings certain limitations with it. Tested psychometric measures and scales hold high reliability but may see its limitations in internal and external validity, e.g., the question raised if the psychological time scale 'consideration of future consequences' and the 'Philadelphia mindfulness scale' can be attributed to a social phenomenon. Finally, pre-testing of scales could only be briefly discussed here with more information finding its limitations in the scope of the paper. Moreover, it has long been addressed if and how cultural context can be measured. Our approach could only be a starting point. Similarly, the other measures (e.g. internet use, use styles, etc.) are a selection based on careful review of psychometric scales and measures in general, but do not provide *the* but *one* solution to cover the theoretical constructs.

The outlined questionnaire finds its full representation in multivariate data analysis methods. Beyond descriptive statistics, inference statistics may focus both on regression and co-variance based structural equation modeling (SEM) [Reinecke 2005]. Such SEM will be theory testing; however, depending on the theoretical foundation beyond the one outlined here, it may be strictly confirmatory SEM, alternative modeling or model generating SEM [MacCallum 1986]. In order to do so, cleaning the data with further alterations (i.e., filtering for target culture, weighting according to social desirability, confirmatory factor analysis of temporal understanding, etc.) will be mandatory and it might prove helpful to structure data of each target culture around milieus.

To sum it up, the suggested survey questionnaire may overcome empirical over-simplification of the notion of social time in Germany and China [e.g., Hofstede 2001], which has been so far only criticized theoretically [Fang 2003], and finally provide quantitative empirical answers to so-called digital acceleration, i.e. temporal change through digital media [e.g., Barker 2018; Rosa 2005; Wajcman and Dodd 2016].

Acknowledgements

I would like to thank Prof. Hans-Jörg Stiehler, Prof. Stefanie Averbeck-Lietz, Dipl. Ing. (FH) Markus Faust, Aaron F. Lerma B.A., Michael Burdett for research comments and proof reading. Moreover, I am grateful to Annemarie Faust for believing in my work.

References

- Albert, M., Hurrelmann, K., Quenzel, G., and TNS Infratest (2015), *Jugend 2015: 17. Shell Jugendstudie. Handbücher*: Vol. 03401, FISCHER, Frankfurt am Main, Germany.

- Ankar, C. (2008), "On the Applicability of the Most Similar Systems Design and the Most Different Systems Design in Comparative Research", *International Journal of Social Research Methodology*, vol. 5, no. 11, pp. 389–401.
- Baacke, D. (1996), "Medienkompetenz – Begrifflichkeit und sozialer Wandel", in A.V. Rein (ed.), *Theorie und Praxis der Erwachsenenbildung. Medienkompetenz als Schlüsselbegriff*, Klinkhardt, Bad Heilbrunn, Germany, ss. 112–124.
- Barker, T. (2018), *Against transmission: Media philosophy and the engineering of time*, Bloomsbury Academic, London, UK, New York, NY, USA.
- Beck, K. (1994), *Medien und die soziale Konstruktion von Zeit: Über die Vermittlung von gesellschaftlicher Zeitordnung und sozialem Zeitbewusstsein*, Westdeutscher Verlag, Opladen, Germany.
- Berger, P.L., and Luckmann, T. (2010), *Die gesellschaftliche Konstruktion der Wirklichkeit: Eine Theorie der Wissenssoziologie* (23^d ed.), Fischer Taschenbuch-Verlag, Frankfurt am Main, Germany.
- Blank, G. (2013), *2013 OxIS questionnaire*, available at: <http://blogs.oii.ox.ac.uk/oxis/wp-content/uploads/sites/43/2014/10/oxis-2013-questionnaire-all-parts.pdf> (Accessed 1 April 2020)
- Bluedorn, A.C., Kalliath, T.J., Strube, M.J., and Martin, G.D. (1999), "Polychronicity and the Inventory of Polychronic Values (IPV): The development of an instrument to measure a fundamental dimension of organizational culture", *Journal of Managerial Psychology*, vol. 14, no. (3/4), pp. 205–230.
- Borscheid, P. (2004), *Das Tempo-Virus. Eine Kulturgeschichte der Beschleunigung*, Campus Verlag, Frankfurt am Main, New York.
- Cardaciotto, L., Herbert, J.D., Forman, E.M., Moitra, E., and Farrow, V. (2008), "The assessment of present-moment awareness and acceptance: The Philadelphia Mindfulness Scale", *Assessment*, vol. 15, no. 2, pp. 204–223.
- Castells, M. (2010), *The rise of the network society* (2nd ed.), Chichester, West Sussex, Malden, MA: Wiley-Blackwell.
- China Internet Network Information Center (2020), "Statistical Report on Internet Development in China", available at: <https://cnnic.com.cn/IDR/ReportDownloads/202008/P020200827549953874912.pdf> (Accessed 1 April 2020).
- Chinese Culture Connection (1987), "Chinese Values and the Search for Culture-Free Dimensions of Culture", *Journal of Cross-Cultural Psychology*, vol. 18, no. 2, pp. 143–164.
- Elias, N., and Schröter, M. (2005), *Über die Zeit.: Arbeiten zur Wissenssoziologie*. Suhrkamp, Frankfurt am Main, Germany.
- Fang, T. (2003), "A Critique of Hofstede's Fifth National Culture Dimension", *International Journal of Cross Cultural Management*, vol. 3, no. 3, pp. 347–368.

- Faust, M. (2016), "How the Internet Changes the Way we Deal with and Plan Time in China and Germany", *IADIS International Journal on WWW/Internet*, vol. 14, no. 2, pp. 1–22.
- Früh, W. (1991), *Medienwirkungen: das dynamisch-transaktionale Modell: Theorie und empirische Forschung*, Westdeutscher Verlag, Opladen, Germany.
- Früh, W. (2003a), "Theorien, theoretische Modelle und Rahmentheorien: Eine Einleitung", in Früh, W. and Stiehler, H.-J. (eds.), *Theorie der Unterhaltung: Ein interdisziplinärer Diskurs*, Herbert von Halem, Köln, Germany, ss. 9–26.
- Früh, W. (2003b), "Triadisch-dynamische Unterhaltungstheorie (TDU)", in Früh, W. and Stiehler, H.-J. (eds.), *Theorie der Unterhaltung: Ein interdisziplinärer Diskurs*, Herbert von Halem, Köln, Germany, ss. 27–56.
- Früh, W., Schulze, A.-K., and Wunsch, C. (2002), *Unterhaltung durch das Fernsehen: Eine molare Theorie*, UVK, Konstanz, Germany.
- Fuhse, J.A., and Stegbauer, C. (eds.) (2011), *Kultur und mediale Kommunikation in sozialen Netzwerken. Netzwerkforschung*, VS, Verlag für Sozialwissenschaften, Wiesbaden, Germany.
- Gehrau, V. (2003), "Unterhaltung durch das Fernsehen: Eine Leseart der molaren Theorie von Werner Früh", in Früh, W. and Stiehler, H.-J. (eds.), *Theorie der Unterhaltung: Ein interdisziplinärer Diskurs*, Herbert von Halem, Köln, Germany, ss. 57–73.
- Geißler, K.A. (2000), *Vom Tempo der Welt – und wie man es überlebt*, Basel, Freiburg, Wien, Germany.
- Gosling, S.D., Rentfrow, P.J., and Swann, W.B. (2003), "A very brief measure of the Big-Five personality domains", *Journal of Research in Personality*, vol. 37, no. 6, pp. 504–528.
- Görland, S. (2020), *Medien, Zeit und Beschleunigung. Mobile Mediennutzung in Interimszeiten*, Springer, Wiesbaden, Germany.
- Granovetter, M.S. (1973), "The Strength of Weak Ties", *American Journal of Sociology*, vol. 78, no. 6, pp. 1360–1380.
- Hall, E. T. (1984), *The dance of life: The other dimension of time*, Anchor Press, New York, USA.
- Hand, M., and Gorea, M. (2018), "Digital Traces and Personal Analytics: iTime, Self-Tracking, and the Temporalities of Practice", *International Journal of Communication*, no. 12, pp. 666–682.
- Harkness, J.A., Vijver, F.J.R. van de, and Mohler, P.P. (2003), *Cross-cultural survey methods. Wiley series in survey methodology*, J. Wiley, Hoboken, N.J, USA.
- Harzing, A.-W., Reiche, B.S., and Pudelko, M. (2013), "Challenges in international survey research: a review with illustrations and suggested solutions for best practice", *European Journal International Management*, vol. 7, no. 1, pp. 112–134.

- Helfrich-Hölter, H. (2011), "Zeit und Kultur", in Dreyer, W. and Höbner, U. (eds.), *Perspektiven interkultureller Kompetenz*, Vandenhoeck and Ruprecht, Göttingen, Germany, ss. 125–136.
- Henckel, D., Bender, C., Haefner, G., and Geißler, K. A. (2000). *Beschleunigen, Verlangsamung. Herausforderung an zukunftsfähige Gesellschaften*. Verlag W. Kohlhammer, Stuttgart, Germany.
- Hepp, A., Krotz, F., Moores, S., and Winter, C. (eds.) (2006), *Konnektivität, Netzwerk und Fluss: Konzepte gegenwärtiger Medien-, Kommunikations- und Kulturtheorie. Medien – Kultur – Kommunikation*, VS Verlag für Sozialwissenschaften, Wiesbaden, Germany.
- Hofstede, G.H. (2001), *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.), Sage, Thousand Oaks, Calif, USA.
- Hofstede, G.H. (2012), *What about Germany?* available at: <http://geert-hofstede.com/germany.html> (Accessed 1 April 2020).
- House, R. J. (Ed.) (2004), *Culture, leadership, and organizations: The GLOBE study of 62 societies*, Sage Publications, Thousand Oaks, Calif, USA.
- Huang, M., Chen, Y., and Elfenbein, H. (2014), Chinese Version of the Ten Item Personality Measure (TIPI), available at: <http://homepage.psy.utexas.edu/HomePage/Faculty/Gosling/tipi%20site/TIPIChineseElfenbein.doc> (Accessed 1 April 2020).
- Innis, H.A. (2004), *Changing concepts of time*, Rowman and Littlefield Publishers, Lanham, Md, USA.
- Kantar Media CIC (2018), *2017 China Social Media Landscape*, available at: <http://www.cicdata.com/landscape/#> (Accessed 1 April 2020).
- Koch, T. (2010), *Macht der Gewohnheit? Der Einfluss der Habitualisierung auf die Fernsehnutzung*, VS Verlag für Sozialwissenschaften, Wiesbaden, Germany.
- Kroeber, A.L., and Kluckhohn, C. (1963), *Culture: A critical review of concepts and definitions*. Vintage books, Vintage Books, New York, USA.
- Krotz, F. (2001), *Die Mediatisierung kommunikativen Handelns: Der Wandel von Alltag und sozialen Beziehungen, Kultur und Gesellschaft durch die Medien*, Westdeutscher Verlag, Wiesbaden, Germany.
- Lalwani, A.K., Shavitt, S., and Johnson, T. (2006), "What is the relation between cultural orientation and socially desirable responding?", *Journal of Personality and Social Psychology*, vol. 90, no. 1, pp. 165–178.
- Lei, W., and He, R. (2010), "Analysis of the impact of mobile media environment on social time [浅析移动媒体环境对社会时间的影响]", *International News Industry*, no. 3, pp. 84–89.
- Levine, R.V., and Norenzayan, A. (1999), "The Pace of Life in 31 Countries", *Journal of Cross-Cultural Psychology*, vol. 30, no. 2, pp. 178–205, available at: <http://www2.psych.ubc.ca/~ara/Manuscripts/Levine%26Norenzayan%20POL.pdf> (Accessed 1 April 2020).

- Lü, Q. (2006), Anhangband. Medienkompetenz von Studierenden an chinesischen Hochschulen, available at: <https://pub.uni-bielefeld.de/publication/2304430> (Accessed 1 April 2020).
- Lü, Q. (2008), *Medienkompetenz von Studierenden an chinesischen Hochschulen VS Research*, VS, Verl. für Sozialwiss, Wiesbaden, Germany.
- MacCallum, R. (1986), "Specification searches in covariance structure modeling", *Psychological Bulletin*, vol. 100, no. 1, pp. 107–120.
- Mifont, T.L., and Bieniok, M. (2008), *Zimbardo Time Perspective Inventory German Version*, available at: http://www.emcdda.europa.eu/attachements.cfm/att_91011_DE_ZTPI%20German%20Version.pdf (Accessed 1 April 2020).
- Möhring, W., and Schlütz, D. (2010), *Die Befragung in der Medien- und Kommunikationswissenschaft: Eine praxisorientierte Einführung* (2nd ed.), VS Verlag für Sozialwissenschaften, Wiesbaden, Germany.
- Muck, P.M., Hell, B., and Gosling, S.D. (2007), "Construct Validation of a Short Five-Factor Model Instrument", *European Journal of Psychological Assessment*, vol. 23, no. 3, pp. 166–175.
- Palhus, D.L. (1984), "Two-component models of social desirability responding", *Journal of Personality and Social Psychology*, vol. 46, no. 3, pp. 598–609.
- Papsdorf, C., Jakob, S., Puritza, L., Schmitt, J.-P. (2018), "Gründe und Formen der freiwilligen Nichtnutzung des Internets. Eine explorative Studie zum Internetverzicht bei Jugendlichen", *Österreichische Zeitschrift für Soziologie*, vol. 43, no. 4, ss. 347–366.
- Perlot, F. (2012), OfflinerInnen in Österreich. "Motive für die Nichtnutzung des Internets", *Österreichische Zeitschrift Für Politikwissenschaft*, vol. 4, no. 4, ss. 363–382.
- Projektgruppe ARD/ZDF-Multimedia (2020), *ARD/ZDF Onlinestudie 2019: Aktuelle Ergebnisse der Internetnutzung in Deutschland*, available at: http://www.ard-zdf-onlinestudie.de/files/2019/Pressemeldung_ARD-ZDF-Onlinestudie_2019.pdf
- Prüfer, P., and Rexroth, M. (1996), *Verfahren zur Evaluation von Survey-Fragen: Ein Überblick*. Mannheim, available at: Zentrum für Umfragen, Methoden und Analysen – ZUMA – website: https://www.ssoar.info/ssoar/bitstream/handle/document/20020/ssoar-1996-prufer_et_al-verfahren_zur_evaluation_von_survey-fragen.pdf (Accessed 1 April 2020).
- Prüfer, P., and Rexroth, M. (2005), *Kognitive Interviews*, available at: https://www.ssoar.info/ssoar/bitstream/handle/document/20147/ssoar-2005-prufer_et_al-kognitive_interviews.pdf (Accessed 1 April 2020).
- Prüfer, P., and Rexroth, M. (2008), *Zwei-Phasen-Pretesting: ZUMA-Arbeitsbericht 2000/08*. Mannheim. available at: Zentrum für Umfragen, Methoden und Analysen – ZUMA – website: https://www.gesis.org/fileadmin/upload/forschung/publikationen/gesis_reihen/zuma_arbeitsberichte/00_08.pdf (Accessed 1 April 2020).

- Reinecke, J. (2005), *Strukturgleichungsmodelle in den Sozialwissenschaften*, Oldenbourg, München, Germany.
- Reinhard, U. (2016), *Freizeit Monitor 2016: Stiftung für Zukunftsfragen*, available at: https://www.stiftungfuerzukunftsfragen.de/fileadmin/user_upload/forschung_aktuell/PDF/Forschung-Aktuell-269-Freizeit-Monitor-2015-Die-beliebtesten-Freizeitaktivitaeten-der-Deutschen.pdf (Accessed 1 April 2020).
- Reisch, L. (2018), *Time Policies for a Sustainable Society*, Springer, Wiesbaden, Germany.
- Rippl, S., and Seipel, C. (2008), *Methoden kulturvergleichender Sozialforschung: Eine Einführung*, VS Verlag für Sozialwissenschaften, Wiesbaden, Germany.
- Rosa, H. (2005), *Beschleunigung: Die Veränderung der Zeitstrukturen in der Moderne*, Suhrkamp, Frankfurt am Main, Germany.
- Schenk, M. (2002), *Medienwirkungsforschung* (2nd ed.), Mohr Siebeck, Tübingen, Germany.
- Schweiger, W. (2005), "Gibt es einen transmedialen Nutzungsstil?" *Publizistik*, vol. 50, no. 2, ss. 173–200.
- Schweiger, W. (2006), "Transmedialer Nutzungsstil und Rezipientenpersönlichkeit: Theoretische Überlegungen und empirische" *Publizistik*, vol. 51, no. 3, ss. 290–312.
- Sharma, S. (2014), *In the meantime: Temporality and cultural politics*, Duke University Press, Durham, N.C, USA.
- Steenkamp, J.-B. E.M., Jong, M.G. de, and Baumgartner, H. (2010), "Socially Desirable Response Tendencies in Survey Research", *Journal of Marketing Research*, vol. 47, no. 2, ss. 199–214.
- Strathman, A. (2005), Consideration of Future Consequences Scale: English Version. available at: <http://web.missouri.edu/~strathmana/CFC%20%20English.pdf> (Accessed 1 April 2020).
- Strathman, A. (2010a), Consideration of Future Consequences: Chinese Version. available at: <http://web.missouri.edu/~strathmana/CFCChinese.pdf> (Accessed 1 April 2020).
- Strathman, A. (2010b), Consideration of Future Consequences: German Version. available at: <http://web.missouri.edu/~strathmana/CFC%20%20German.pdf> (Accessed 1 April 2020).
- Strathman, A., Gleicher, F., Boninger, D.S., and Edwards, C.S. (1994), "The consideration of future consequences: Weighing immediate and distant outcomes of behavior", *Journal of Personality and Social Psychology*, vol. 66, no. 4, pp. 742–752.
- Triandis, H.C., and Gelfand, M.J. (1998), "Converging measurement of horizontal and vertical individualism and collectivism", *Journal of Personality and Social Psychology*, vol. 74, no. 1, pp. 118–128.
- Triandis, H. C. (1995), *Individualism and collectivism. New directions in social psychology*, Boulder: Westview Press.

- Usunier, J.-C., and Valette-Florence, P. (2007), “The Time Styles Scale: A review of developments and replications over 15 years”, *Time and Society*, vol. 16, no. 2/3, pp. 333–366.
- Vorderer, P., Krömer, N., and Schneider, F.M. (2016), “Permanently online – Permanently connected: Explorations into university students’ use of social media and mobile smart devices”, *Computers in Human Behavior*, vol. 63, pp. 694–703.
- Wajcman, J., and Dodd, N. (eds.) (2016), *The sociology of speed: Digital, organizational, and social temporalities*, Oxford University Press, Oxford, USA.
- Wang, Y., Chen, X.-J., Cui, J.-F., and Liu, L.-L. (2015), “Testing the Zimbardo Time Perspective Inventory in the Chinese context”, *PsyChJournal*, vol. 4, no. 3, pp. 166–175.
- Zhou, R., Fong, P.S.W., and Tan, P. (2014), “Internet use and its impact on engagement in leisure activities in China”, *PloS One*, vol. 9, no. 2, DOI: 10.1371/journal.pone.0089598.
- Zickuhr, K. (2013), *Who’s not online and why: Pew Internet Project*, available at: http://www.pewinternet.org/files/old-media//Files/Reports/2013/PIP_Offline%20adults_092513_PDF.pdf (Accessed 1 April 2020).
- Zimbardo, P.G. (2013), *Zimbardo Time Perspective Inventory*, available at: <http://file-id.org/120718/508> (Accessed 1 April 2020).
- Zimbardo, P.G., and Boyd, J. (1999), “Putting Time in Perspective: A Valid, Reliable Individual-Differences Metric”, *Journal of Personality and Social Psychology*, vol. 77, no. 6, pp. 1271–1288.

Information about the author

Maria Faust, University of Leipzig, Leipzig, Germany; Nikolaistrasse, 27–29, Leipzig, Germany, 04109; maria.faust@uni-leipzig.de

Информация об авторе

Мария Фауст, Университет Лейпцига, Лейпциг, Германия; Николаштрассе, д. 27–29, Лейпциг, Германия, 04109; maria.faust@uni-leipzig.de