



Human Factor in Digital Transformation

*Doctoral Colloquium SS 2024:
An annotated Bibliography*

Human Factor in Digital Transformation, Doctoral Colloquium SS 2024: An Annotated Bibliography

Creative Commons License CC BY NC 4.0

Publication date
2024

Citation (APA): Atia, M., Eder-Riedl, M., Fischer, J., Habersack, A., Herzog, M., Kunstic, A., Lang-Quantendorff, L., Manieu, J., Melcher, S., Mölzer, W., Ott, J., Rosenball, R., Stocker, M., Wildberger, M., Zuanni, C. & Otrell-Cass, K. (2024). Human Factor in Digital Transformation, Doctoral Colloquium SS 2024: An Annotated Bibliography. University of Graz

This work is licensed under the Creative Commons Attribution Non-Commercial 4.0 licence (BY-NC). This licence permits the adaptation, reproduction and distribution of the material in any format or medium for any purpose, including commercial, provided the author is credited. (Licence text: <https://creativecommons.org/licenses/by-nc/4.0/deed.de>) The terms of the Creative Commons licence apply only to original material. The reuse of material from other sources (marked with source reference) such as charts, illustrations, photos and text extracts may require further permission for use from the respective rights holder.

ISBN: 978-3-903374-35-5
DOI 10.25364/978-3-903374-35-5

Contents

Introduction	3
Health and wellbeing across the lifespan	4
Training and recovering.....	4
Individuality - Josefina Manieu	4
Ecological validity - Josefina Manieu.....	4
Individual medicine – Andreas Habersack	5
Sustainable treatments – Andreas Habersack	5
Quality of life – Josef Fischer.....	5
Neuromuscular adaptation – Josef Fischer	6
Muscle hypertrophy and mechanical tension – Josef Fischer.....	6
Tissue plasticity and adaptability – Andreas Habersack.....	6
Musculoskeletal tissue adaptation - Josefina Manieu.....	7
Women’s health	7
Effects of endurance training vs. endurance strength training on women with abdominal obesity - Martin Atia	7
Disability	8
Motor functional disability – Ana Kunstic	8
Inclusive mobility support – Ana Kunstic	8
Physical activity – Ana Kunstic.....	8
Older adults and care.....	9
Resistance training modalities for older adults – Martin Atia.....	9
Moderate-to-high-intensity resistance circuit training for older adults – Martin Atia	9
Effects of resistance training frequency on psychological functioning in older adults – Martin Atia.....	10
Wellbeing at work	10
Burdening- Manuela Eder-Riedl	10
Conflicts- Manuela Eder-Riedl.....	10
Roles- Manuela Eder-Riedl	11
Methodological advances in research and practice, as well as technology assessment.....	12
Industry.....	12
Digital transformation of the fitness industry - Martin Atia.....	12

Fitness centres in the Austrian sports market - Martin Atia	12
Environment.....	13
Advanced remote sensing techniques for climate analysis – Matthias Stocker	13
Natural climate extremes as proxies for researching atmospheric processes and geoengineering impacts – Matthias Stocker	13
Simplified modelling of atmospheric processes – Matthias Stocker	14
Sustainability.....	14
Sustainability – Julius Ott	14
Industrial ecology/ circular economy – Julius Ott	15
Value chain – Julius Ott	15
Life cycle assessment - Ladislaus Lang-Quantzendorff.....	16
Prospective life cycle assessment - Ladislaus Lang-Quantzendorff.....	16
Socio-economic and educational influences on individual and community outcomes	18
Socio-economic factors	18
Linked employer-employee data - Riccarda Rosenball.....	18
Raw vs. adjusted gender pay gap - Riccarda Rosenball.....	18
Impact of trade on firm dynamics - Riccarda Rosenball.....	19
Specialization of labor – division of labor – Wiltrud Mölzer	19
Matching theory and the DMP model – Wiltrud Mölzer	20
Labor market and public labor offices in the German-speaking area – Wiltrud Mölzer	21
Education	21
Deficit orientation – Manfred Herzog	21
Teacher expectations – Manfred Herzog	22
Attribution theory – Manfred Herzog	22
Symbolic interactionism - Sabrina Melcher	23
Visitor studies (e.g. Contextual Model of Learning) – Sabrina Melcher.....	23
Generations – Sabrina Melcher	23
The relation between resources, power and group - Martin Wildberger	24
Learning by fiction - Martin Wildberger.....	24
Religion in the postapocalypse - Martin Wildberger.....	25
Ethics and responsibility in a technological age.....	26
Responsibility ethics in the technological age - Ladislaus Lang-Quantzendorff	26

Introduction

The Human factor in Digital Transformation (HFDT) Doctoral Colloquium held in the summer semester 2024 had a specific ambition, namely for doctoral students to focus on key concepts in their work, identify possible connections to digital transformation and identify and comment on key ideas in their work. The idea was that this should:

- allow for cross disciplinary discussions in the spirit of the HFDT network, and
- provide opportunities for all participants to connect their research with the elements of this colloquium

This annotated bibliography represents the latter part of the DQ. Individuals discussed and present here key ideas in their work that were then organised into themes.

These themes reflect a holistic view of how interconnected and interdependent various fields are in addressing global challenges. They illustrate the importance of integrating knowledge from health sciences, environmental studies, technology, and social sciences to develop comprehensive solutions that are ethical, effective, and sustainable. This integration underscores the necessity for interdisciplinary collaboration in research and policy-making to tackle complex issues that span multiple domains.

Chiara Zuanni and Kathrin Otrell-Cass

Health and wellbeing across the lifespan

Many documents touch on aspects of physical and mental health, from e.g., the impact of maternal obesity on pregnancy outcomes to the benefits of physical activity for mental health and quality of life in different populations all the way to human rights and decent working conditions to prevent disease in the first place. The importance of tailored health interventions, such as resistance training for older adults or lifestyle interventions during pregnancy, underscores the need for personalized health care strategies.

Training and recovering

Individuality - Josefina Manieu

Individuality as a concept, points to the consideration of patients as an individual and not as an injury. Individualized treatment over “gold standard” procedures will lead to building a better relation between a patient and his/her attending or therapist, to trust in the process of rehabilitation, and to improve not only physical but also mental health.

Malliaras P, Barton CJ, Reeves ND, Langberg H. Achilles and patellar tendinopathy loading programmes : a systematic review comparing clinical outcomes and identifying potential mechanisms for effectiveness. Sports Med. 2013 Apr;43(4):267-86. doi: 10.1007/s40279-013-0019-z.

This systematic review examines different rehabilitation treatment approaches to Patellar and Achilles Tendinopathies, pointing that around 45% patients might not respond to the common or usual treatment defined for these types of injuries (i.e. eccentric training). For this reason, after reviewing different rehabilitation modalities, and the constant adjustment of their variables, the clinical recommendations focus on the individual assessment of the signs and symptoms of each patient, to direct the treatment to their own deficiencies, and not to what the “normal” course of the disease/injury takes.

Ecological validity - Josefina Manieu

Ecological validity refers to the degree of realism of a scientific design or study can be applied in a user’s real-life context. When doing sport and rehabilitation science, many variables are controlled to obtain the most objective result. While this shows us a scientifically valid and reliable result, it normally does not apply to a daily person’s lifestyle, since those variables are only possible to control under specific conditions in a laboratory environment.

Gatz M, Betsch M, Dirrichs T, Schradling S, Tingart M, Michalik R, Quack V. Eccentric and Isometric Exercises in Achilles Tendinopathy Evaluated by the VISA-A Score and Shear Wave Elastography. Sports Health. 2020 Jul/Aug;12(4):373-381. doi: 10.1177/1941738119893996.

The study done by Gatz and colleagues indeed showed a decrease in tendon stiffness after two different treatment protocols. But these protocols were performed every day of the week for 3 months. Although showing positive results, this study shows a low degree of ecological validity, since patients do not have the time, motivation, or enough knowledge to perform these exercises on their own every day in real-life. Other life obligations like work, family time, and house chores take priority, which translates in low energy, less time, or lack of consistency to perform the prescribed treatment. Doing science to improve

quality of life should consider what a daily, normal-life looks like for different parts of the society, to be able to direct it to them, and make it applicable within the complication that real-life already brings.

Individual medicine – Andreas Habersack

The concept of individual medicine is a personalized approach to healthcare that considers each patient's unique physiology, lifestyle, and environmental factors.

Graham, H., Rosenbaum, P., Paneth, N. et al. Cerebral palsy. Nat Rev Dis Primers 2, 15082 (2016). doi.org/10.1038/nrdp.2015.82

The review by Graham et al. (2016) provides an extensive overview of cerebral palsy, a complex neurodevelopmental disorder characterised by motor impairments. The authors discuss the aetiology, epidemiology, classification, clinical features, management of CP, and clinical perspectives. They emphasise the importance of multidisciplinary care, individual approaches and early intervention strategies in optimising outcomes for individuals with CP.

Sustainable treatments – Andreas Habersack

The concept of sustainable treatments refers to therapeutic approaches that not only address symptoms and functions but also promote long-term health, well-being, and underlying tissue properties while minimizing adverse effects.

Hösl M, Böhm H, Arampatzis A, Döderlein L. Effects of ankle-foot braces on medial gastrocnemius morphometrics and gait in children with cerebral palsy. Journal of Children's Orthopaedics. 2015;9(3):209-219. doi:10.1007/s11832-015-0664-x

The study by Hösl et al. (2015) examines the impact of ankle-foot braces on both the morphometrics of the medial gastrocnemius muscle and gait patterns in children with cerebral palsy. Using advanced imaging techniques and gait analysis, the researchers discovered that while ankle-foot braces enhanced certain aspects of gait, such as increased dorsiflexion during the swing phase, they also resulted in alterations in muscle morphometrics. In particular, the braces were associated with a reduction in the length of muscle fascicles and muscle thickness, which may have implications for long-term muscle health and function in this population.

Quality of life – Josef Fischer

Quality of Life (QoL) refers to an individual's overall assessment of their well-being across various aspects of life, including physical health, psychological state, level of independence, social relationships, and personal beliefs. It encompasses both subjective evaluations and objective conditions of living.

Hart PD, Buck DJ. The effect of resistance training on health-related quality of life in older adults: Systematic review and meta-analysis. Health Promotion Perspectives. 2019;9(1):1-12. doi:10.15171/hpp.2019.01.

Hart and Buck (2019) conducted a systematic review and meta-analysis to assess the impact of resistance training on various Quality of Life dimensions among older adults. This comprehensive study utilized the SF-36/12, to evaluate the effects of RT. The meta-analysis revealed significant improvements in mental health dimensions such as mental health and vitality, and physical health dimensions including bodily pain and general health. These findings underscore the potent role of RT in enhancing daily functioning and well-being in the elderly population, promoting it as a key intervention for sustaining health and quality of life as adults age.

Neuromuscular adaptation – Josef Fischer

Neuromuscular adaptation is defined as the alterations in muscle function and coordination that occur in response to resistance training. These adaptations contribute to improvements in strength and performance due to an enhanced efficiency of the neuromuscular system.

Gabriel DA, Kamen G, Frost G. Neural adaptations to resistive exercise: Mechanisms and recommendations for training practices. Sports Med. 2006;36(2):133-149. doi: 10.2165/00007256-200636020-00004.

The review by Gabriel et al. (2006) examines the neural mechanisms underlying adaptations to resistance training. It identifies increased motor unit recruitment, enhanced firing rates, and improved synchronization of firing as key contributors to strength gains. These neural changes occur rapidly and precede muscle hypertrophy, emphasizing the importance of considering neuromuscular factors in training programs.

Muscle hypertrophy and mechanical tension – Josef Fischer

The process of muscle hypertrophy is characterized by an increase in muscle fiber size, which is primarily driven by resistance training. Mechanical tension is regarded as a crucial factor in this process, where sustained load during exercise leads to cellular and molecular responses that facilitate muscle growth.

Schoenfeld BJ. The mechanisms of muscle hypertrophy and their application to resistance training. J Strength Cond Res. 2010 Oct;24(10):2857-72. doi: 10.1519/JSC.0b013e3181e840f3.

Schoenfeld's study (2010) describes the role of mechanical tension in muscle hypertrophy. The research outlines how applying continuous tension on muscles through resistance training activates signaling pathways that lead to muscle growth. The study further explains how variables such as load, volume, and contraction type impact the degree of tension experienced by muscle fibers, and consequently, their adaptation. By understanding these mechanisms, practitioners can optimize resistance training programs to maximize hypertrophy, aligning exercise design with desired growth outcomes.

Tissue plasticity and adaptability – Andreas Habersack

The concept of tissue plasticity and adaptability describes the capacity of muscles and tendons to undergo changes in response to various stimuli, including exercise, treatment, and injury. This adaptability enables them to grow stronger, increase flexibility, and recover from damage, thereby supporting overall musculoskeletal function and performance.

Kruse A, Rivares C, Weide G, Tilp M and Jaspers RT (2021) Stimuli for Adaptations in Muscle Length and the Length Range of Active Force Exertion—A Narrative Review. Front. Physiol. 12:742034. doi: 10.3389/fphys.2021.742034

The review by Kruse et al. (2021) provides a comprehensive overview of the stimuli that induce adaptations in muscle length. The authors discuss various factors that influence muscle length adaptations, including mechanical loading, neural activation, and stretching protocols. They highlight the importance of understanding these stimuli for optimising training programmes aimed at improving muscle flexibility, function, and performance.

Musculoskeletal tissue adaptation - Josefina Manieu

Adaptation is described as the evolutionary process where an organism adjusts to live and respond better to a new environment or set of habits. The same happens with the tissues in the body, in this case muscle and tendon. The changes in their properties when damaged will create a disbalance in the body, that needs to be readjusted and accustomed to their new normal, for an optimal recovery and functionality in the long term.

Lee WC, Ng GY, Zhang ZJ, Malliaras P, Masci L, Fu SN. Changes on Tendon Stiffness and Clinical Outcomes in Athletes Are Associated With Patellar Tendinopathy After Eccentric Exercise. Clin J Sport Med. 2020 Jan;30(1):25-32. doi: 10.1097/JSM.0000000000000562.

This original research measures the stiffness of the injured tendon before and after two different types of interventions. The stiffness of a tissue is the degree of deformation it can achieve before breaking when a load or a stress is applied to it. In tendinopathies, this stiffness increases, which means the tissue (in this case the tendon) becomes less deformable, more rigid and it can break easily. This original research found that with some exercise intervention, the stiffness of the tendon got reduced, which translates into a more resistant tendon. This represents an adaptability of the tissue to a new set of parameters.

Women's health

Effects of endurance training vs. endurance strength training on women with abdominal obesity - Martin Atia

The study compares the impacts of 3-month endurance training and endurance strength training.

Skrypnik, D., Bogdański, P., Mądry, E., Karolkiewicz, J., Ratajczak, M., Kryściak, J., Pupek-Musialik, D., & Walkowiak, J. (2015). Effects of Endurance and Endurance Strength Training on Body Composition and Physical Capacity in Women with Abdominal Obesity. Obesity Facts, 8(3), 175–187. <https://doi.org/10.1159/000431002>

Key words: Endurance training, Endurance strength training, Abdominal obesity, Body composition

The trial compared the effects of endurance training with those of strength endurance training in women with abdominal obesity. Both groups showed significant improvements in body composition, exercise capacity and cardiovascular function. Strength endurance training led to additional gains in lean mass and fat-free mass compared to endurance training. However, there were no significant differences between the two groups. Overall, both types of exercise were effective for women with abdominal obesity.

The authors investigated the effects of 3 months of endurance training with those of strength endurance training on anthropometric parameters, body composition, exercise capacity, and cardiovascular function in women with abdominal obesity. Both interventions resulted in significant improvements in body composition, exercise capacity and cardiovascular function. Strength Endurance training resulted in additional gains in lean mass and fat-free mass compared to aerobic exercise. The study's rigorous methodology and focus on a specific population of women with abdominal obesity increase its relevance and applicability to practitioners and researchers in the field of exercise science and obesity management.

Disability

Motor functional disability – Ana Kunstic

The condition of motor functional disability refers to a neurological disorder called cerebral palsy, which involves motor impairments characterized by increased muscle tone and stiffness, affecting movement and posture.

Patel, D. R., Neelakantan, M., Pandher, K., & Merrick, J. (2020). Cerebral palsy in children: a clinical overview. Translational Pediatrics. 9(1): 125-135. doi: 10.21037/tp.2020.01.01

The study provides a comprehensive overview of cerebral palsy (CP), with a focus on its clinical classification, risk factors, diagnosis, and rehabilitation. It emphasizes the importance of early diagnosis and multidisciplinary treatments, including physiotherapy, orthopaedic interventions and assistive technology, to optimize long-term functional outcomes and improve the quality of life of people with cerebral palsy.

Inclusive mobility support – Ana Kunstic

The concept of inclusive mobility support describes the opportunity for people with severe walking and coordination impairments to engage in upright mobility and physical activity through the use of a custom-built tricycle known as the Frame Runner, promoting inclusion, independence and improved overall well-being.

Voltolini, Lucas de Assis; Araújo, Pedro Henrique de; Antunes, Diego; Lima, Gabriel Benedito; Lucas, Ricardo Dantas de; Fischer, Gabriela (2022): What Do We Know about Frame Running? A Narrative Review. In: Current sports medicine reports 21(12): 448–453. doi: 10.1249/JSR.0000000000001018

This narrative review provides an overview of Frame Running (FR), a new modality of para-athletics practiced using a tricycle without pedals called Frame Runner. It highlights three main themes: health and quality of life, sport classification, and training/testing in the context of FR. Originally developed for individuals with cerebral palsy, FR has shown positive effects on physical health, social integration and self-confidence. Furthermore, evidence-based classification systems and testing protocols have been developed to ensure fair competition and performance assessment.

Physical activity – Ana Kunstic

Physical activity is any physical movement that requires the expenditure of energy and plays a crucial role in promoting physical health, mental well-being and overall quality of life. It is crucial for treating and preventing physical diseases and certain psychiatric conditions.

Peluso, M. A. M., & Andrade, L. H. S. G. de (2005). PHYSICAL ACTIVITY AND MENTAL HEALTH: THE ASSOCIATION BETWEEN EXERCISE AND MOOD. Clinics, 60(1), 61–70. <https://doi.org/10.1590/S1807-59322005000100012>

Peluso and Andrade (2005) recognized regular physical activity for its positive impact on both physical and mental health, including reducing symptoms of depression and anxiety. However, excessive exercise can lead to mood disturbances like depression, especially in elite athletes. Balancing moderate and intense exercise is key for maximizing mental health benefits while minimizing the risks.

Older adults and care

Resistance training modalities for older adults – Martin Atia

Resistance training modalities for older adults refers to various approaches, such as free weights and machines, used to improve muscular strength and function in the aging population.

Schott, N., Johnen, B., & Holfelder, B. (2019). Effects of free weights and machine training on muscular strength in high-functioning older adults. Experimental Gerontology, 122, 15–24. <https://doi.org/10.1016/j.exger.2019.03.012>

Key words: Free weight training, Machine training, older adults, Muscle strength, Subjective perceptions

The authors conducted a randomised controlled trial (RCT) comparing the effects of high resistance training using free weights versus machines on muscle strength development and subjective perceptions in high-functioning older adults over a 26-week period. The study included 32 participants aged 60 to 86 years, 70% of whom were women. Both groups showed significant increases in muscle strength, with the free weight training (FWT) group reporting higher levels of enjoyment, motivation, future expectations and perceived benefits to daily life compared to the machine training (MT) group. The FWT group generally rated their exercise programme more favourably (Schott et al., 2019). This study, authored by Nadja Schott, Professor of Sport Psychology and Human Movement Science, provides valuable insights for exercise physiologists, gerontologists and fitness professionals and highlights the benefits of free weight training for older adults.

Moderate-to-high-intensity resistance circuit training for older adults – Martin Atia

Moderate-to-high intensity resistance circuit training for the elderly refers to a structured exercise programme that includes resistance exercises performed in a circuit format.

Marcos-Pardo, P. J., Orquín-Castrillón, F. J., García, G. M. G., Menayo-Antúnez, R., González-Gálvez, N., De Souza Vale, R. G., & Martínez-Rodríguez, A. (2019). Effects of a moderate-to-high intensity resistance circuit training on fat mass, functional capacity, muscular strength, and quality of life in elderly: A randomized controlled trial. Scientific Reports, 9(1). <https://doi.org/10.1038/s41598-019-44329-6>

Key words: Resistance circuit training, Health parameters, Functional capacity, Muscle strength, Moderate-to-high intensity

In this randomised controlled trial (RCT), Marcos-Pardo et al (2019) examined the effects of 12 weeks of moderate- to high-intensity resistance circuit training on various health outcomes in older people aged 65-75 years. Measures included fat mass, functional capacity, muscle strength and quality of life. Significant improvements in body composition, functional capacity and muscle strength were observed in the intervention group. The study concluded that moderate- to high-intensity resistance circuit training has a positive effect on the health and functional capacity of older people. Pablo J. Marcos-Pardo, from the SPORT research group at the University of Almería, contributed to the authority of the study. The target audience includes health professionals, exercise physiologists and researchers interested in optimizing exercise interventions for older populations. This study adds to existing research by highlighting the effectiveness of resistance circuit training in improving body composition, functional capacity and muscle strength in older adults.

Effects of resistance training frequency on psychological functioning in older adults – Martin Atia

This concept examines the effects of different resistance training frequencies on quality of life, sense of coherence, and depressive symptoms in older adults.

Kekäläinen, T., Kokko, K., Sipilä, S., & Walker, S. (2017). Effects of a 9-month resistance training intervention on quality of life, sense of coherence, and depressive symptoms in older adults: randomized controlled trial. Quality of Life Research, 27(2), 455–465. <https://doi.org/10.1007/s11136-017-1733-z>

Key words: Resistance training, Older adults, Quality of life, Depressive symptoms, Training frequency, WHOQOL-Bref

The authors investigated the effects of a 9-month resistance training intervention on quality of life, sense of coherence, and depressive symptoms in older adults. Participants were divided into three training groups and participated in supervised resistance training twice a week for 3 months, followed by different frequencies (1, 2, or 3 times a week) for the next 6 months. Psychological functioning was measured using several scales, including the WHOQOL-Bref, Antonovsky's SOC-13, and Beck's Depression Inventory II. The results showed that the intervention had a positive effect on environmental quality of life and sense of coherence, with twice-weekly training showing greater benefits on these psychological aspects compared with training once or three times a week. (Kekäläinen et al., 2017). This research is valuable for health professionals and policy makers (health insurers, for example) who want to develop effective exercise interventions for older adults to improve psychological well-being.

Wellbeing at work

Burdening- Manuela Eder-Riedl

Today, companies including leaders and Human Resources experts are responsible for their employees, are responsible for considering their employees' wellbeing and health (Bernatzeder, 2018) and need to address this in their business strategies (e.g., Soldat:innen im Auslandseinsatz by Feller& Stade , 2006) concerning working conditions, weather, uniform etc., with the goal of offering suitable recreation-programmes.

Bernatzeder, Petra (2018): Erfolgsfaktor Wohlbefinden am Arbeitsplatz. Praxisleitfaden für das Management psychischer Gesundheit. Berlin: Springer

Keywords: psychology, management, human resource management

Feller, Michael; Stade, Claudia A. (2006): Physische und psychische Belastungen im Einsatz. In: S. B. Gareis, P. Klein (Hrsg.): Handbuch Militär und Sozialwissenschaft. Wiesbaden: VS Verlag für Sozialwissenschaften / GWV Fachverlage GmbH.

Keywords: social science, military, society, soldier

Conflicts- Manuela Eder-Riedl

Facing and dealing with conflict situations is part of social life. Conflict is addressed in the literature by looking at interdisciplinary and transdisciplinary settings (Bonacker 2005) offering insights into the basics of conflict literature (e.g., Glasl 2020, 2017; Kreyenberg , 2005; Schwarz, 2014).

Bonacker, Thorsten (2005): Sozialwissenschaftliche Konflikttheorien: Eine Einführung. 3. Auflage. Wiesbaden: VS Verlag für Sozialwissenschaften.

Keywords: conflict theory, social science, edited volumes

Glasl, Friedrich (2017): Selbsthilfe in Konflikten. Konzepte – Übungen – Praktische Methoden. 8. Auflage. Stuttgart: Verlag Freies Geistesleben

Keywords: conflict resolution, self help, anthroposophy

Glasl, Friedrich (2020): Konfliktmanagement. Ein Handbuch für Führung, Beratung und Mediation. 12., aktualisierte und erweiterte Auflage. Stuttgart: Verlag Freies Geistesleben

Keywords: conflict management, leadership, human resource management

Kreyenberg, Jutta (2005): Handbuch Konflikt-Management. Konfliktdiagnose, -definition und -analyse, Konfliktebenen, Konflikt- und Führungsstile, Interventions- und Lösungsstrategien, Beherrschung der Folgen. 2. Auflage. Berlin: Cornelsen.

Keywords: conflict diagnosis, leadership, solution strategies, intervention

Schwarz, Gerhard (2014): Konfliktmanagement. Konflikte erkennen, analysieren, lösen. 9. Auflage. Wiesbaden: Springer Gabler

Keywords: conflict management, economics, industrial management

Roles- Manuela Eder-Riedl

The uniformed STAO's in their role act only as executive agents and therefore identified and forced to act within. As Parsons (1945) describes, are individuals in a system defined through normative expectations. Vester (2009) describes, that the role impact came through Ralph Linton in "Study of Man" in 1936.

Parsons, Talcott (1945): Systematische Theorie in der Soziologie. Gegenwärtiger Stand und Ausblick. In: Parsons (1964): Beiträge zur soziologischen Theorie. Hrsg. von Dietrich Rüschemeyer. 3., unveränderte Auflage. Neuwied: Luchterhand.

Keywords: social science theories, edited volume

Vester, Heinz-Günter (2009): Kompendium der Soziologie I: Grundbegriffe. 1. Auflage. Wiesbaden: VS Verlag

Keywords: Empirical social science research

Vester, Heinz-Günter (2009): Kompendium der Soziologie II: Die Klassiker. 1. Auflage. Wiesbaden: VS Verlag

Keywords: sociological theories, history of sociological research

Methodological advances in research and practice, as well as technology assessment

Research in these fields contributes to advancing climate change analysis, medical research and economics. This indicates a cross-disciplinary reliance on cutting-edge technology to enhance data collection and analysis. These technological advances allow for more precise and comprehensive understanding across different fields.

Industry

Digital transformation of the fitness industry - Martin Atia

The digital transformation of the fitness sector refers to the integration of technology and digital solutions into various aspects of fitness services.

García-Fernández, J., Ruíz, P. G., Algar, R., Anderson, D., Barbosa, H. F., Da, F., Bastos, C. P., Bo, H. H., Guadalupe, I., & Carranza, R. (2022). The digital transformation of the fitness sector: a global perspective. In Emerald Publishing Limited eBooks. <https://doi.org/10.1108/9781801178600>

Key words: Digital transformation, Fitness sector, Trainer-consumer interaction, Optimization, Fitness services

The digital transformation of the fitness sector highlights the challenges and opportunities of digitalization, particularly in response to recent global challenges such as the COVID-19 pandemic. This development has facilitated interactions between trainers and consumers, using social media to enhance a sector that is already experiencing robust growth (García-Fernández et al., 2022). Jerónimo García-Fernández, Associate Professor of Sports Science at the University of Seville, brings his expertise in sports management and technology to explore the digital transformation of the fitness sector. The audience includes fitness industry professionals, technology developers and researchers interested in understanding the impact of digitalization on fitness services, highlighting the role of digital solutions in improving the consumer experience and optimizing services.

Fitness centres in the Austrian sports market - Martin Atia

Fitness centres in Austria are an important part of the sports market. The number of members sank from 645,000 to 600,000 in 2020.

Statista. (2024, January 26). Fitnessbranche in Österreich. Accessed on 26/04/2024 Available at <https://de.statista.com/themen/9214/fitnessbranche-in-oesterreich/#topicOverview>

Key words: Fitness centers, Sports market, Number of members

Fitness centers play a significant role in the Austrian sports market. In 2020, there were 578. The number of members fell from 645,000 to 600,000 in 2020 and is expected to recover slowly, but without reaching pre-crisis levels. Turnover also recorded a sharp decline to €198.3 million in 2020. (Statista [B. Zeppenfeld], 2024) quoted from .statista.at

Statista provides key data on the Austrian fitness center landscape, including membership numbers and turnover. This information is valuable for industry players and researchers, as it highlights market trends and potential areas for recovery following the crisis.

Environment

Advanced remote sensing techniques for climate analysis – Matthias Stocker

The concept of utilizing advanced remote sensing techniques such as Global Navigation Satellite System (GNSS) Radio Occultation (RO) to measure atmospheric parameters crucial for climate system analysis. This method captures how GNSS signals, bent and delayed by the atmosphere, provide precise data on temperature, pressure, and humidity across various altitudes. Such data are essential for enhancing climate models, improving weather forecasts, and understanding climate dynamics on a global scale.

Steiner, A. K., et al. (2011). GPS radio occultation for climate monitoring and change detection, Radio Science, 46, RS0D24. doi:10.1029/2010RS004614.

Keywords: GNSS, climate monitoring, atmospheric data, radio occultation, global coverage, accuracy.

Anthes, R. A., et al. (2008). The COSMIC/FORMOSAT-3 Mission: early results, Bulletin of the American Meteorological Society, 89(3), 313-333. doi:10.1175/BAMS-89-3-313.

Keywords: COSMIC, FORMOSAT-3, GNSS RO, satellite meteorology, atmospheric profiling, climate research.

Kursinski, E. R., et al. (1997). Observing Earth's atmosphere with radio occultation measurements using the Global Positioning System, Journal of Geophysical Research, 102(D19), 23429-23465. doi:10.1029/97JD01569.

Keywords: GPS, radio occultation, atmospheric sounding, temperature profiling, humidity measurements.

Natural climate extremes as proxies for researching atmospheric processes and geoengineering impacts – Matthias Stocker

This concept is used to investigate how extreme atmospheric events such as volcanic eruptions and large wildfires influence the global climate by introducing aerosols into the upper atmosphere. By analyzing the conversion of sulfur dioxide from volcanic eruptions and particles from wildfires into aerosols, this research sheds light on their effects on solar radiation absorption and atmospheric circulation. These natural events provide important analogies for understanding the potential impacts of geoengineering strategies in which atmospheric aerosols are intentionally injected into the atmosphere to alter the global climate. Studying these events helps to understand the complex dynamics of aerosol interactions in the atmosphere and to predict the far-reaching consequences of aerosol injections for climate engineering.

Robock, A. (2000). Volcanic eruptions and climate, Reviews of Geophysics, 38(2), pp. 191-219. doi:10.1029/1998RG000054.

Keywords: volcanic eruptions, sulfate aerosols, geoengineering, climate effects, atmospheric chemistry, solar radiation.

Peterson, D. A., et al. (2018). *Wildfire-driven thunderstorms cause a volcano-like stratospheric injection of smoke*, *npj Climate and Atmospheric Science*, 1, 30. doi:10.1038/s41612-018-0039-3.

Keywords: wildfire smoke, stratospheric injection, climate impact, pyrocumulonimbus clouds, aerosol dynamics.

Niemeier, U., & Timmreck, C. (2015). *What is the limit of climate engineering by stratospheric injection of SO₂?*, *Atmospheric Chemistry and Physics*, 15, 9129-9141. doi:10.5194/acp-15-9129-2015.

Keywords: climate engineering, stratospheric sulfate injection, model simulation, climate response, aerosol effects.

Simplified modelling of atmospheric processes – Matthias Stocker

This concept, which uses simplified approximations to understand complex processes in the atmosphere, focuses on the interaction between different atmospheric components such as ozone and temperature as well as large scale circulation patterns. Such fundamental approaches are crucial to understand the complex mechanisms that determine the behaviour of the atmosphere, allowing for clearer insights and more effective predictions of climate-related phenomena without the need for more sophisticated computationally expensive models.

Randel, W. J., et al. (2021). *A simple model of ozone-temperature coupling in the tropical lower stratosphere*, *Atmos. Chem. Phys.*, 21, pp. 18531-18542. doi: 10.5194/acp-21-18531-2021.

Keywords: ozone-temperature coupling, stratospheric processes, climate modelling, Brewer-Dobson Circulation, simplified models.

Yulaeva, E., & Holton, J. R. (1994). *On the cause of the annual cycle in tropical lower-stratospheric temperatures*, *Journal of Atmospheric Sciences*, 51, pp. 169-174. doi: 10.1175/1520-0469(1994)051<0169:OTCOTA>2.0.CO;2.

Keywords: annual cycle, tropical temperatures, stratospheric temperatures, atmospheric processes, temperature variability.

Sustainability

Sustainability – Julius Ott

The concept of sustainability originated from forestry and was defined in the report “Our common future” from 1987, as to “meet the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). Since then, the term has become more multifaceted, inspiring different disciplines. Ian Scoones gives an overview of the way the term/concept developed over time (Scoones, 2007) .

(Purvis et al., 2019) use the three “pillars” social, economic and environmental” to holistically approach sustainability, but struggle to operationalize each field to give a scientifically rigorous definition. Therefore, further concepts such as Industrial Ecology/Circular Economy (below) are introduced.

The concept of sustainability is often used in context of climate change mitigation (Pachauri, 2008) and helps to avoid “problem shifting” i.e. causing other problems (e.g. biodiversity loss) by trying to reduce greenhouse gas emissions.

Brundtland, G. H. (1987). Our common future—Call for action. Environmental Conservation, 14(4), 291–294.

Pachauri, R. (2008). Climate change and sustainability science. Sustainability Science, 3, 1–3.

Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. Sustainability Science, 14(3), 681–695. <https://doi.org/10.1007/s11625-018-0627-5>

Scoones, I. (2007). Sustainability. Development in Practice, 17(4–5), 589–596. <https://doi.org/10.1080/09614520701469609>

Industrial ecology/ circular economy – Julius Ott

Industrial Ecology is a research field that looks at sustainability issues (as defined above) from multiple perspectives. The International Society for Industrial Ecology that also publishes the scientific journal of industrial ecology defines industrial ecology on their website ([What is industrial ecology? - International Society for Industrial Ecology - ISIE \(is4ie.org\)](#)): An integral part is the systemic relationships between society, the economy and the natural environment and the recognition that economic systems and ecosystems are similar. Multiple disciplines are involved such as natural sciences, engineering and social science. Industrial Ecology ideas have “culminated in the concept of circular economy”.

A lot of definitions of circular economy are available. (Kirchherr et al., 2017) gives an overview and summarizes the concept as: “Economic system that replaces the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes. It operates at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, thus simultaneously creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations. It is enabled by novel business models and responsible consumers.”

Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. Resources, Conservation and Recycling, 127, 221–232. <https://doi.org/10.1016/j.resconrec.2017.09.005>

Value chain – Julius Ott

An important author to understand the concept of value chains is Michael E. Porter who defines it as a “process view of organizations” (Porter, 2008). “Value chains” is kind of a contemporary word to describe what was previously known as supply chain or logistics. In the future we might talk about value networks to describe the complex interlinkages of companies and their material and product flows. In my research group using value chain is most common. A core aspect is the recognition that looking at value chains as a whole, the system is more than the “sum of its parts”, meaning that e.g., if you optimize each chain link by itself it might not lead to the best overall solution (Sá et al., 2020). Another important dimension of the concept is the massive need for information exchange without losing the unique selling proposition (Lee & Whang, 2000).

Porter, M. E. (2008). Competitive Advantage: Creating and Sustaining Superior Performance. Free Press. <https://books.google.at/books?id=H9ReAijCK8cC>

Sá, M. M. de, Miguel, P. L. de S., Brito, R. P. de, & Pereira, S. C. F. (2020). Supply chain resilience: The whole is not the sum of the parts. *International Journal of Operations & Production Management*, 40(1), 92–115.

Lee, H. L., & Whang, S. (2000). Information sharing in a supply chain. *International Journal of Manufacturing Technology and Management*, 1(1), 79–93.

Life cycle assessment - Ladislaus Lang-Quantendorff

Life cycle assessment has the potential to allocate the responsibility fairly to those processes, which contribute directly to the harms of uncovering of the world. In its beginnings the prevention from resource exhaustion were driving forces. Today, the central target is the reduction of emissions.

Patrick Geddes (1884). "An Analysis of the Principle of Economics". In: Royal Soc. of Edinburgh: Proc., v. 12, p. 943-980. 1884

Keywords: quantitative process analysis, process chain thinking, precursor of life cycle assessment, material flows, limited resources

ISO (2006). Environmental management – Life cycle assessment – Requirements and Guidelines (ISO 14044:2006); German and English version EN ISO 14044:2006. Tech. rep. Berlin: Deutsches Institut für Normung

Keywords: standard for life cycle assessment, calculation requirements, standardized guidelines, inventory calculation, impact assessment

Reinout Heijungs and Sangwon Suh (2002). "The Computational Structure of Life Cycle Assessment". In: Eco-efficiency in industry and science. Vol. 11. Dordrecht: Springer Netherlands. isbn: 978-90-481-6041-9. doi: 10.1007/978-94-015-9900-9

Keywords: calculation methods for life cycle assessment, matrix based approach, inventory analysis, relation with input-output analysis, practical implementation

Prospective life cycle assessment - Ladislaus Lang-Quantendorff

Aiming for a method to not only avert present damages on the world, but also give hints how to develop towards a future planet worth living, a new method has been developed. Prospective life cycle assessment includes dynamic systems considering the transformation of the whole coupled economy.

Matthias Buyle et al. (Oct. 2019). "The future of ex-ante LCA? Lessons learned and practical recommendations". In: Sustainability (Switzerland) 11 (19), p. 5456. issn: 20711050. doi: 10.3390/su11195456

Keywords: framework for prospective life cycle assessment, emerging technologies, literature review, technology development, technological learning, technology diffusion

Didier Beloin-Saint-Pierre et al. (July 2020). "Addressing temporal considerations in life cycle assessment". In: Science of the Total Environment 743, p. 140700. doi: 10.1016/j.scitotenv.2020.140700

Keywords: temporal considerations in life cycle assessment, dynamics in prospective life cycle assessment, forecasting, scenarios, literature review, standardization of terms

R. Sacchi et al. (May 2022). "Prospective Environmental Impact Assessment (premise): A streamlined approach to producing databases for prospective life cycle assessment using integrated assessment models". In: Renewable and Sustainable Energy Reviews 160, p. 112311. issn: 18790690. doi: 10.1016/j.rser.2022.112311

Keywords: model for prospective life cycle assessment, modify background data, socio-techno-economic pathways, Integrated Assessment Models, transformations on energy-intensive activities.

Socio-economic and educational influences on individual and community outcomes

Several of the reviewed documents discuss how socio-economic factors, such as social disadvantages, affect teacher expectations and educational outcomes. These factors can also affect personal experience in museums or behaviour in conflicts. Similarly, economic analyses of labour markets highlight how socio-cultural and economic conditions influence wage disparities and employment trends. These themes emphasize the interaction between socio-economic status, social exchanges and various life outcomes, like educational or employment outcomes

Socio-economic factors

Linked employer-employee data - Riccarda Rosenball

Linked employer-employee data is a type of dataset that connects information about individual workers with the companies where they are employed. This data includes detailed records on employees' demographics, job positions, wages, and tenure, alongside firm-level data such as industry classification, size, and economic performance. By integrating these two levels of data, researchers and policymakers can gain insights into labor dynamics, such as wage disparities and employment trends, and how these relate to firm characteristics and economic conditions.

Abowd, J. M., & Kramarz, F. (1999). Econometric analyses of linked employer–employee data. Labour economics, 6(1), 53-74.

Panel Data, Econometric Methods, Labor Market Dynamics, Firm-Level Outcomes, Employment Mobility

Card, D., Heining, J., & Kline, P. (2013). Workplace Heterogeneity and the Rise of West German Wage Inequality. The Quarterly Journal of Economics, 128(3), 967-1015.

Wage Inequality, Employer-Employee Data, Economic Analysis, Workplace Diversity, West Germany

Abowd, J. M., Kramarz, F., & Margolis, D. N. (1999). High Wage Workers and High Wage Firms. Econometrica, 67(2), 251-333.

Wage Inequality, Econometric Modeling, Employer-Employee Data, Firm Effects, Worker Effects

Raw vs. adjusted gender pay gap - Riccarda Rosenball

The raw pay gap is a straightforward comparison between the average earnings of men and women, calculated without adjusting for factors that can influence wages, such as job role, industry, experience, or hours worked. In contrast, the adjusted pay gap considers these variables to provide a more precise measure of wage inequality by comparing the earnings of men and women who are in similar positions with similar qualifications and working conditions.

Böheim, R., Fink, M., & Zulehner, C. (2021). About time: The narrowing gender wage gap in Austria. Empirica, 48(4), 803-843.

Gender Wage Gap, Austria, EU-SILC Data, Pay Inequality, Decomposition, Wage Analysis

Blau, F. D., & Kahn, L. M. (2017). The Gender Wage Gap: Extent, Trends, and Explanations. Journal of Economic Literature, 55(3), 789-865.

Gender Wage Gap, Labor Market Segregation, Wage Disparities, United States, Economics Analysis

Goldin, C. (2014). A Grand Gender Convergence: Its Last Chapter. American Economic Review, 104(4), 1091-1119.

Gender Convergence, Occupational Flexibility, Wage Equality, Workforce Trends, Labor Economics

Impact of trade on firm dynamics - Riccarda Rosenball

Melitz (2003) presents a model detailing how trade liberalization impacts firms differently based on their productivity levels. The model suggests that only highly productive firms benefit from trade because they can efficiently handle the costs of entering and competing in new markets, while less productive firms may exit the market due to these costs. This process of selective survival and exit enhances overall industry productivity by increasing the average productivity level, fundamentally altering our understanding of trade's effects on firm dynamics and industry structure.

Melitz, M. J. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. econometrica, 71(6), 1695-1725.

International Trade, Firm Productivity, Market Entry, Industry Dynamics, Productivity

Helpman, E., Melitz, M., & Yeaple, S. (2004). Export versus FDI with Heterogeneous Firms. American Economic Review, 94(1), 300-316.

Exporting, Foreign Direct Investment (FDI), Heterogeneous Firms, International Trade, Productivity

Bernard, A. B., Jensen, J. B., Redding, S. J., & Schott, P. K. (2007). Firms in International Trade. Journal of Economic Perspectives, 21(3), 105-130.

International Trade, Firm Characteristics, Exporting and Importing Decisions,

Specialization of labor – division of labor – Wiltrud Mölzer

Specialization of labor, closely tied to the concept of the division of labor, refers to the process where individuals or groups perform specific tasks within a production process to increase efficiency and productivity. This concept, highlighted by Adam Smith in his pin factory example, forms the basis of modern economic systems by improving productivity, enhancing skill levels, and promoting economic growth through specialized expertise.

Smith, A. (1776). An Inquiry into the Nature and Causes of the Wealth of Nations. W. Strahan and T. Cadell. London.

Keywords: economic theory, labor specialization, efficiency, productivity, industrial division, wealth creation.

Durkheim, É. (1893). The Division of Labor in Society.

Keywords: social cohesion, labor specialization, societal structure, economic efficiency, functionalism, normative regulation.

Marx, K. (1867). Capital: A Critique of Political Economy, Vol. 1. New York: Vintage.

Keywords: division of labor, labor process, capitalism critique, industrial efficiency, economic development, surplus value.

Stigler, G. J. (1951). The Division of Labor is Limited by the Extent of the Market. Journal of political economy, 59(3), 185-193.

Keywords: market size, labor division, specialization limits, economic scale, productivity effects, industrial economics.

Matching theory and the DMP model – Wiltrud Mölzer

Matching Theory, particularly in its development through the work of Peter Diamond, Dale Mortensen, and Christopher Pissarides (Nobel Laureates), examines how job vacancies and workers are matched based on skill sets. The DMP Model (Diamond-Mortensen-Pissarides) is a framework in labor economics that studies the processes of job searching and matching and it focuses on how search frictions can impact unemployment and labor market dynamics. These models emphasize the importance of efficient job matching to maximize economic productivity and growth.

Diamond, P. A. (1984). A Search-Equilibrium Approach to the Micro Foundations of Macroeconomics. MIT Press.

Keywords: search-equilibrium model, foundations of search markets, search frictions, economic fluctuations, unemployment, macroeconomic analysis.

Pissarides, C. A. (1990). Equilibrium Unemployment Theory. Cambridge, MA: MIT Press.

Keywords: unemployment theory, labor market equilibrium, job search mechanics, market matching, structural unemployment.

Mortensen, D. T., & Pissarides, C. A. (1994). Job creation and job destruction in the theory of unemployment. The review of economic studies, 61(3), 397-415.

Keywords: job-specific shock process, creation-destruction processes, job turnover rates, matching model of unemployment, labor market dynamics.

Mortensen, D. T. (1986). Job search and labor market analysis. Handbook of labor economics, 2, 849-919.

Keywords: job search theory, duration of unemployment spells, wage search model, search frictions, job turnover behavior, labor market analysis.

Shimer, R. (2005). The cyclical behavior of equilibrium unemployment and vacancies. American economic review, 95(1), 25-49.

Keywords: business-cycle-frequency fluctuations in unemployment and vacancies, vacancy-unemployment ratio, DMP model analysis with shock, DMP model limitations.

Labor market and public labor offices in the German-speaking area – Wiltrud Mölzer

The labor market in the German-speaking area historically evolved into a structured network of public labor offices around the late 19th and early 20th centuries. These institutions played a pivotal role in labor intermediation, with an organizational transition from a bourse model to a more systematic card index model. They facilitated efficient job matching, regulatory oversight, and labor market statistics collection, significantly shaping labor market dynamics and employment strategies.

Jastrow, I. (1918). Arbeitsmarkt. Josef Brix ua (Hg.): Handwörterbuch der Konununalwissenschaften, 1, 126-131.

Keywords: labour market and labor offices, labor market data collection, public labor offices with same guiding principles, German labor market organization, Association of German Labour Exchanges.

Lauer, F. (1908). Die Praxis des öffentlichen Arbeitsnachweises. Berlin: G. Reimer.

Keywords: public labor office practices, job matching techniques, bourse model, bourses du travail, card index model, employment and unemployment statistics.

Wadauer, S., Buchner, T., & Mejstrik, A. (Eds.). (2015). The History of Labour Intermediation: Institutions and Finding Employment in the Nineteenth and Early Twentieth Centuries (Vol. 26). Berghahn Books.

Keywords: labor intermediation history, employment agencies, 19th-century labor markets, institutional evolution, job placement strategies.

Education

Deficit orientation – Manfred Herzog

Deficit orientation is a mindset among certain teachers in which students are perceived in terms of their deficits, such as a lack of requirements and willingness to perform, and not in terms of their potential (Valencia, 1997; 2010). Deficit orientation consists of low performance expectations for students and the externalization of responsibility towards the students (Bremm, 2020).

Bremm, N. (2020). Umso mehr kommt es auf die Lehrperson an. Defizitperspektiven von Lehrkräften an Schulen in sozialräumlich benachteiligten Lagen. In S. Drucks, & D. Bruland (Hrsg.), Kritische Lebensereignisse und die Herausforderungen für die Schule (S. 106-127). Weinheim; Basel: Beltz Juventa. <https://doi.org/10.25656/01:20527>

Keywords: Deficit orientation, schools in disadvantaged locations, disadvantaged students, teacher attitudes, teacher professionalization

Bremm, N. (2021). Skala «Defizitorientierungen von Lehrkräften gegenüber einer sozial benachteiligten Schüler_innenschaft». Pädagogische Hochschule Zürich. <https://doi.org/10.5281/zenodo.5384021>

Keywords: Deficit orientation, questionnaire, disadvantaged students, teacher attitudes, empirical research

Valencia, R. R. (Ed.). (1997). The evolution of deficit thinking: Educational thought and practice. The Falmer Press/Taylor & Francis.

Keywords: Deficit orientation, bias, social background of students, school structure, educational theory

Valencia, R. R. (2010). *Dismantling contemporary deficit thinking: Educational thought and practice. The critical educator*. New York: Routledge.

Keywords: Deficit orientation, educational theory, school structure, genetic pathology, culture of poverty, disadvantaged students

Teacher expectations – Manfred Herzog

The Model of teacher expectations (Jussim, 1986) works as following: First, teachers develop expectations of students based on previous academic performance or categories such as gender or social class. Second, teachers change their behavior based on the expectations towards the students. Third, students adapt their behavior according to the teacher's expectations. This can lead to a self-fulfilling prophecy (Merton, 1948).

Jussim, L. (1986). *Self-Fulfilling Prophecies. A Theoretical and Integrative Review. Psychological Review*, 93(4), 429-445. <https://doi.org/10.1037/0033-295X.93.4.429>

Keywords: Self-fulfilling prophecy, teacher expectations, student behavior, classroom management, bias, attribution theory

Jussim, L., & Harber, K. (2005). *Teacher Expectations and Self-Fulfilling Prophecies: Knowns and Unknowns, Resolved and Unresolved Controversies. Personality and Social Psychology Review*, 9(2), 131-55. https://doi.org/10.1207/s15327957pspr0902_3

Keywords: Teacher expectations, self-fulfilling prophecy, student outcomes, effect sizes, review article
Merton, R. K. (1948). *The self-fulfilling prophecy. Antioch Review*, 8, 193-210.

Keywords: Self-fulfilling prophecy, sociology, interpersonal relations, expectations, social interaction

Attribution theory – Manfred Herzog

Attribution theory in the context of education concerns the causal factors teachers ascribe to the success or failure of students. Attributions can be internal or external and stable or variable (Heider, 1958; Weiner, 2000).

Heider, F. (1958). *The Psychology of Interpersonal Relations. John Wiley & Sons Inc.*
<https://doi.org/10.1037/10628-000>

Keywords: Attribution theory, interpersonal relations, social cognition, social perception, social psychology, errors in perception

Reyna, C. (2000). *Lazy, dumb, or industrious: When stereotypes convey attribution information in the classroom. Educational Psychology Review*, 12(1), 85-110. <https://doi.org/10.1023/A:1009037101170>

Keywords: Attribution theory, stereotypes, disadvantaged students, causal judgements, achievement gap
Weiner, B. (2000). *Intrapersonal and Interpersonal Theories of Motivation from an Attributional Perspective. Educational Psychology Review*, 12(1), 1-14. <https://doi.org/10.1023/A:1009017532121>

Keywords: Attribution theory, motivation, causal inference, self, other

Symbolic interactionism - Sabrina Melcher

Blumer, H. (1969). Symbolic interactionism: Perspective and method (1. paperback print., renewed). Univ. of California Press.

Blumer suggests that people act towards things (which can also be organisations) on the basis of the meaning that these things have for them, whereby meaning is created and adapted through a social process of interaction with other people. What distinguishes social interactionism from other schools of thinking is that interactionist media theory considers the dynamic relationships between the sender, receiver, technology and the content shared in the transmission process.

Visitor studies (e.g. Contextual Model of Learning) – Sabrina Melcher

Falk, J. H., & Dierking, L. D. (1992). The Museum Experience. Howells House.

Falk, J. H., & Dierking, L. D. (2016). The Museum Experience Revisited. Routledge.

Falk and Dierking's "museum experience" provides a valuable guide to understanding what influences the visitor's museum experience. In their book "The Museum Experience Revisited" (2016), they highlight that the "Contextual Model of Learning" (with included the personal, sociocultural and physical context), first developed in 1992 as "The Interactive Experience Model", must be seen as intersecting influences on the museum learning experience. In addition, Falk and Dierking (2016, p. 29) added another context that needs to be considered when addressing the visitor's museum experience, namely "time".

Kidd, J. (2011). Enacting engagement online: Framing social media use for the museum. Information Technology & People, 24(1), 64–77. <https://doi.org/10.1108/09593841111109422>

Kidd's (2011) three frameworks for the museum's online strategy provide a good basis for including the institutional aspects from the museum's perspective when conducting visitor studies. The three contexts she considers are: marketing, inclusivity, collaborative.

Pirrie Adams, K. (2018). Assets, platforms and affordances: The constitutive role of media in the museum. In The Routledge Handbook of Museums, Media and Communication. Routledge.

Due to the move towards new digital technology not only online but also on-site, Pirrie Adams (2018, p. 290) proposes "a new vocabulary for describing the core provisions of the museum", which has the computational aspect as an initial basis. By doing so Pirrie Adams (2018) translates the "collection as comprising 'assets', exhibitions as 'platforms' and interpretative activities as being about the management of 'affordance'" (p. 290).

Generations – Sabrina Melcher

Mannheim, K. (1952). Karl Mannheim: Essays. In P. Kecskemeti (Ed.), Das Problem der Generationen (pp. 279–322). Routledge.

Mannheim's (1952 [1928]) generational theory has a social approach and is based on two building blocks: generation as location and generation as actuality. Whereby he defined the generation as location as the birth cohort people share and the generation as actuality is defined as the shared experience of the generation. Furthermore Mannheim's defines formative years, where people are most perceptive, this is around the age of 17. Within these years crucial events affect them the most. These events are defined as *trigger actions*. Through these changes it is possible that a new *generation style* emerges. When such a group is formed, it is called the *generation-unit* (p. 306), they share the same values and view, which are "formed by their common experiences" (p.306).

Opermann, S. (2013). *Understanding changing news media use: Generations and their media vocabulary*. *Northern Lights: Film & Media Studies Yearbook*, 11(1), 123–146. https://doi.org/10.1386/nl.11.1.123_1

Building on Mannheim's concept of social generation, Opermann (2013, p. 127), suggests that different generations are defined not only by their age, social or historical context but also by their relationship with media technology. He proposes to also add the impact when a new medium emerged (*fresh contact* with a new medium), using the *formative years* as key separator.

Dimock, M. (2019, 2018). *Where Millennials end and Generation Z begins*. *Pew Research Center*. <http://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins>

Dimock is attempting to identify a more distinct separation between the different generations, particularly between Millennials and Generation Z. He also bases this on technological developments. He argues that one key difference between Millennials and Generation Z is the use of social media platforms. While for Generation Z, social media has been a part of their daily lives from an early stage in their lives, the popularity of social media only began to grow in the teenage and early adult years for most Millennials.

Duffy, B. (2021). *Generations: Does when you're born shape who you are?* Atlantic Books.

Bolin, G. (2019). *Generational "we-sense", "they-sense" and narrative: An epistemological approach to media and social change*. *Empiria. Revista de Metodología de Ciencias Sociales*, 42, 21. <https://doi.org/10.5944/empiria.42.2019.23249>

In the book "Generations. Does when you're born shape who you are?" Duffy (2021) discusses intergenerational views on common topics and the "generational we-sense" (Bolin, 2019). Bolin (2019) stated that the "we-sense" is created through the use of media. For Duffy three effects are responsible for the change of "attitudes, beliefs and behaviours" in a generation, namely "period effects, lifecycle effects; cohort effects" (Duffy, 2021, p.8).

The relation between resources, power and group - Martin Wildberger

The relationship between resources, power and group is of great importance for survival. Power can be acquired with resources, and resources can be acquired with power. And the larger or more technically advanced a group is, the more it can acquire both.

[Resource Wars | Fallout Wiki | Fandom](#) ; abgerufen am 11.06.2024.

[Macht, Herrschaft, Gewalt. Differenzierungen der Politischen Soziologie | APuZ 24/1981 | bpb.de](#) ; abgerufen am 11.06.2024.

[SmartBooks 7 \(hu-berlin.de\)](#) ; abgerufen am 06.11.2024.

[Herausforderungen der deutschen Außen- und Sicherheitspolitik bis 2030: Eine Analyse aus Sicht der Zukunftsforschung | Zeitschrift für Außen- und Sicherheitspolitik \(springer.com\)](#) ; abgerufen am 11.06.2024.

Keywords: Resources, Power, Social Group, War, Politics

Learning by fiction - Martin Wildberger

From the ancient Greek dramas and the Bible, to the legends and tales of knights and dragons of the Middle Ages, to the movies and PC games of today, fictional stories are able to teach and make the world clearer and also make decisions easier.

Faulstich, Werner: Grundkurs Filmanalyse. Paderborn: Wilhelm Fink Verlag³2013.

Campbell, Joseph: Der Heros in tausend Gestalten. Frankfurt am Main [u.a.] : Insel-Verlag 2009.

Löwenstein, Martin: Divus Rex – Der göttliche König im Film, in: Bohrmann, Thomas/Veith, Werner/Zöller, Stephan (Hrsg.): Handbuch Theologie und populärer Film. Band 2. Paderborn: Verlag Ferdinand Schöningh GmbH&Co.KG 2009, S. 163–174.

Keywords: Teaching, Film, Media, PC-Games, Learning

Religion in the postapocalypse - Martin Wildberger

Faith and religiosity exist (probably) as long as the Homo Sapiens does. Perhaps even pre-homo-sapiens human relatives had it already. Both faith and religiosity are therefore not only present in the human race, but also (more or less) every human being.

The Bible, deutsche Einheitsübersetzung

[Religion | Fallout Wiki | Fandom](#) ; abgerufen am 11.06.2024.

[View of Religion as Resource in Digital Games \(uni-heidelberg.de\)](#) ; abgerufen am 11.06.2024.

Bosman, Frank G.: The Word Has Become Game: Researching Religion in Digital Games, in: Ahn, Gregor (Hg.): Online – Heidelberg Journal of Religions on the Internet, Volume 11 (2016). Bzw. hier: [The Word Has Become Game: Researching Religion in Digital Games | Online - Heidelberg Journal of Religions on the Internet \(uni-heidelberg.de\)](#) ; abgerufen am 11.06.2024.

Keywords: Religion, Mythology, Social Group, Bible, Theology, Apocalypse

Ethics and responsibility in a technological age

Ethical and legal considerations in the use of technology, whether in environmental engineering or in a broader social life, reflect a broader concern about the moral implications of technological advancements. Discussions on ethics and law in technology and responsibility highlight the need for frameworks that consider long-term impacts on humanity, human dignity and the environment. In this context, existing rights (like human rights) should also be considered and discussed.

Responsibility ethics in the technological age - Ladislaus Lang-Quantzendorff

The key concept of responsibility ethics considers the changes following the successive uncovering of the world by humankind. Technology, as one central thread, degrades the world to a raw material for manipulation. With the transformation from the limited practical function of technology to the driving force for progress, the ethic theory requires expansion from contemporaries to future generations. Hans Jonas phrases a new imperative: "Act so that the effects of your action are compatible with the permanence of genuine human life".

Martin Heidegger (2011). "Die Frage nach der Technik". In: Die Technik und die Kehre. Klett-Cotta. isbn: 9783608910506

Keywords: Ontological view on technology and techne, uncovering of the world, challenged human, technology driven threads, technology criticism

Hans Jonas (2020). Das Prinzip Verantwortung. Versuch einer Ethik für die technologische Zivilisation. Suhrkamp. isbn: 978-3-518-42954-9

Keywords: responsibility ethics, driving forces, technology driven threads, heuristic of fear, ecological imperative, ethics for a future generation

Arnold Gehlen (2007). Die Seele im technischen Zeitalter. Sozialpsychologische Probleme in der industriellen Gesellschaft. Ed. by Karl-Siegbert Rehberg. Klostermann RoteReihe Band 25. isbn: 978-3-465-04044-6

Keywords: human as deficient being, technical intervention, technology in Neolithic sedentism vs. technology in industrialisation, lacking relief by state, technology and arts, affluence criticism