



6th St. Gallen Diversity & Inclusion Week

INTELLIGENCE – IMPLICATIONS FOR
DIVERSITY & INCLUSION

12 – 16 September 2022

Our Speaker



Dr. Anna-Katrin Heydenreich works as a specialist for Diversity & Inclusion and as lecturer at the University of St. Gallen. She is an economist by training and has a strong background in sustainability, a topic she approaches from the perspective of social psychology and discursive organizational psychology. Her doctorate on stakeholder engagement processes lead her to assignments on collaboration and engagement processes in Jerusalem and Switzerland.

A special thanks to our sponsors



Imagine a highly intelligent person!

What does your imagined picture look like?





Kashe Quest 2-year-old from California is the youngest American to become a member of the club of highly intelligent people (MENSA) (CNN, 2021)



Gladys West
Mathematician who gave us GPS



Charles H. Turner
Discovered animals can have complex thoughts



Alice Ball
Developed the first treatment for leprosy



Percy L. Julian Made pain relief affordable



Sophia B. Jones Pioneer in public health



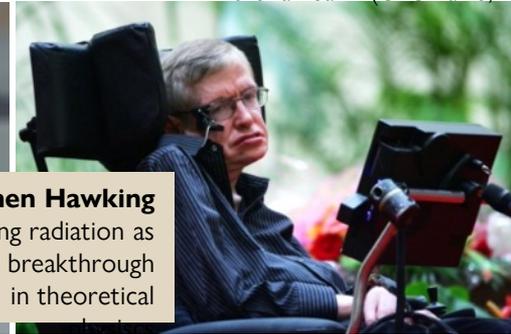
Elijah McCoy
Inventor who revolutionized the railroad



Charles L. Roman
Helped make workplaces safe (CBC Radio, 2021)



Maryam Mirzakhani
first woman and first Iranian who became awarded with the Fields Medal



Stephen Hawking
Hawking radiation as major breakthrough in theoretical physics

Why are people bothered with intelligence and intelligence tests?

Because they want to find the people fitting best for specific tasks

Because they strive to categorize beings

First standardized tests in ancient China (Han-Dynastie, 206 BC - 220 AD)

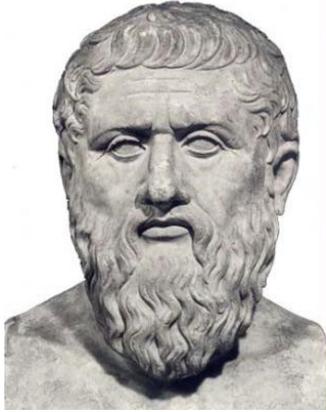


Strauss, 2012

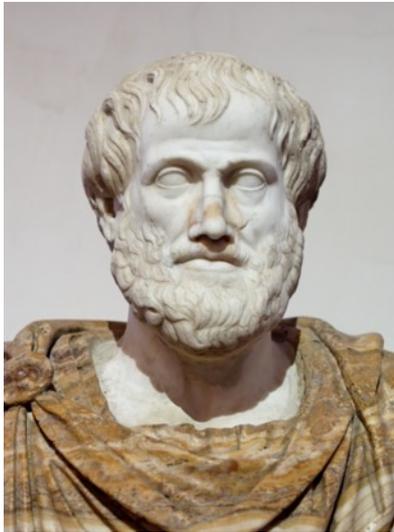
Intelligence in ancient Greece

Aristotle (384-322 BC)

„humans as creatures who reason“



Plato (427-348 BC)

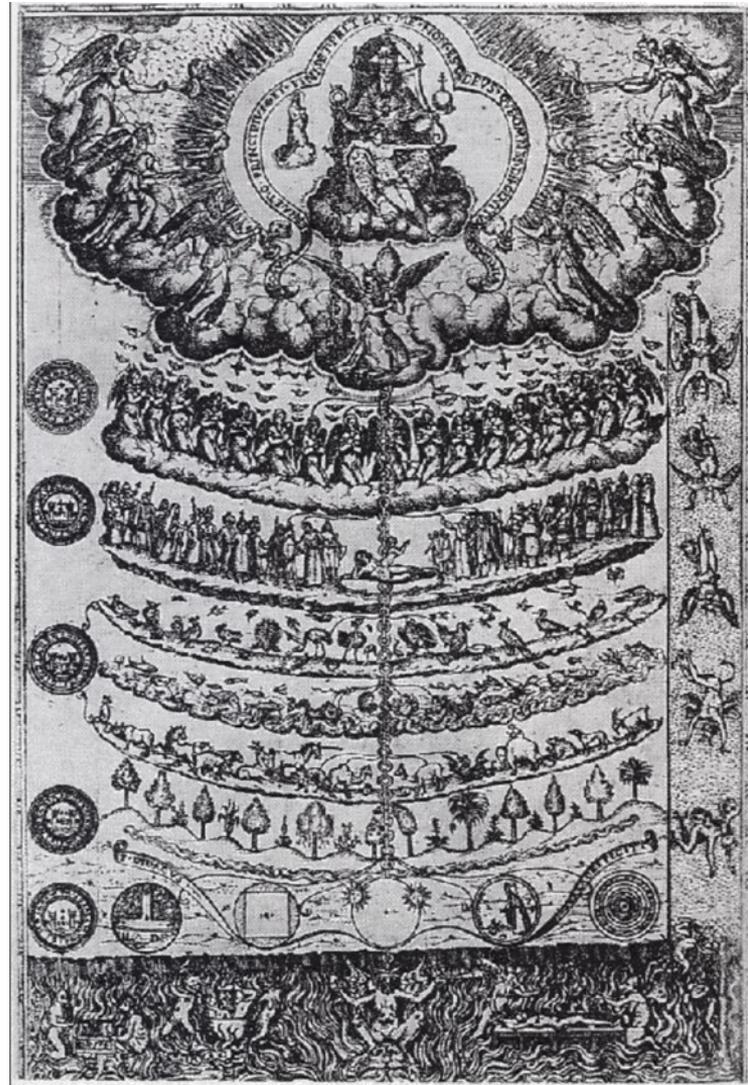


Scala Natura

„The Great Chain of Being“

Carson, 2015;
Rivera, 2019

Didacus Valades, *Rhetorica Christiana* (1579), in Fletcher, 1996



Taxonomys & ,natural' hierarchies in the 18th century

Linneaus (1758)

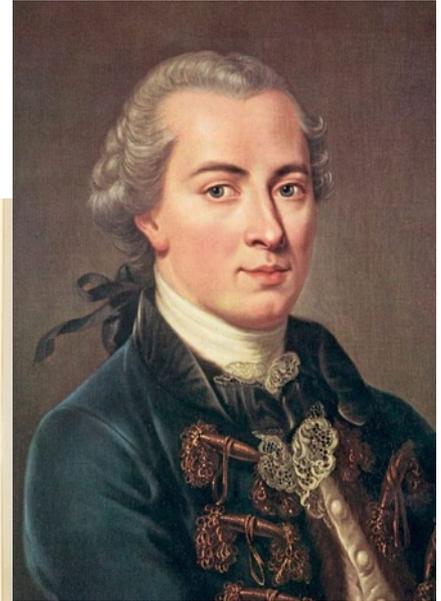


CAROLI LINNÆI
EQUITIS DE STELLA POLARI,
ARCHIATRI REGII, MED. & BOTAN. PROFESS. UPHAL.;
ACAD. UPSAL. HOLMENS. PETROPOL. BEROL. IMPER.
LOND. MONSPEI. TOLOS. FLORENT. SOC.
**SYSTEMA
NATURÆ**
PER
REGNA TRIA NATURÆ,
SECUNDUM
CLASSES, ORDINES,
GENERA, SPECIES,
CUM
CHARACTERIBUS, DIFFERENTIIS.
SYNONYMIS, LOCIS.
TOMUS I.
EDITIO DECIMA, REFORMATA.
Cum Privilegio Sæ Rie Mæi Sveciæ.
HOLMIÆ,
IMPENSIBUS DIRECT. LAURENTII SALVII,
1758.

Voltaire (1751)

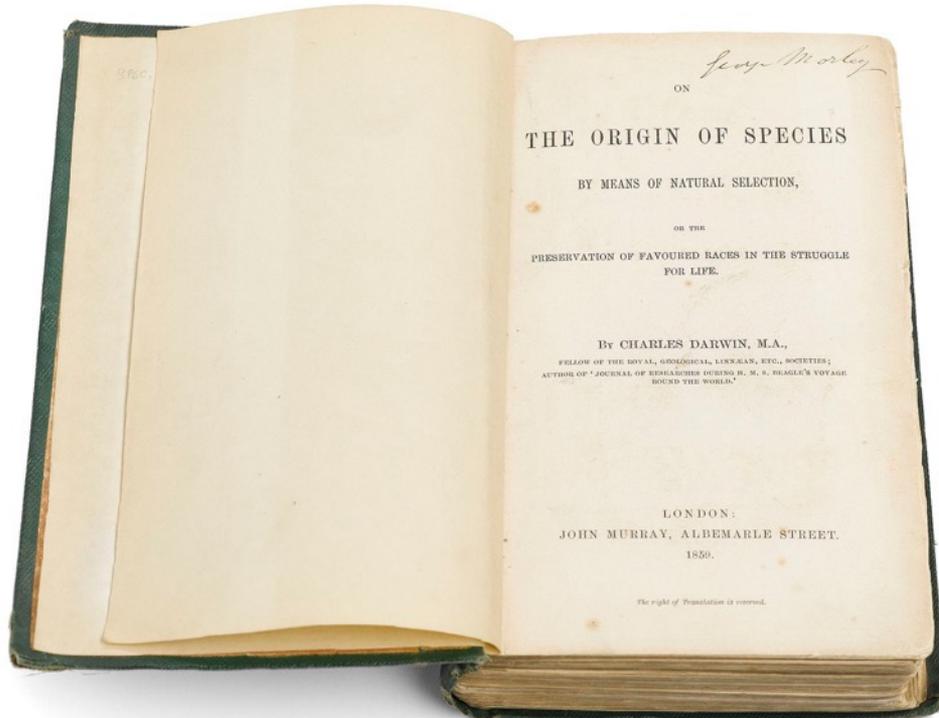


Kant (1745)

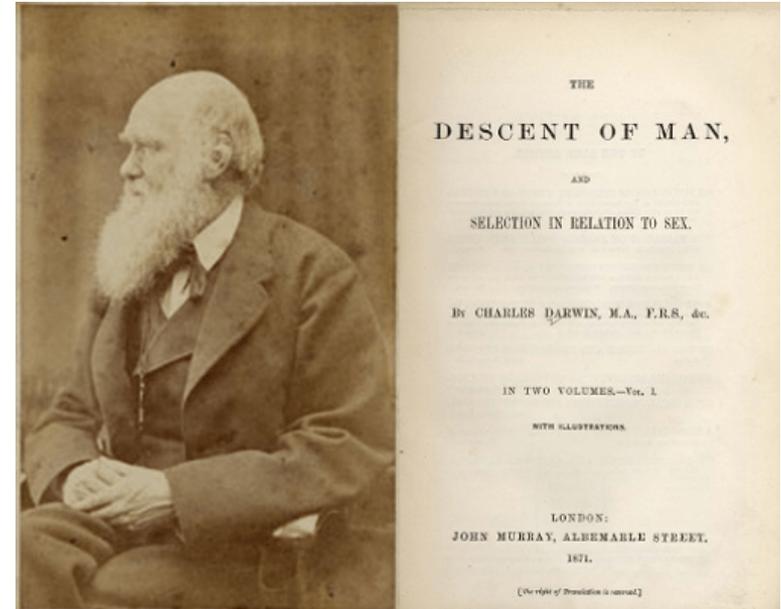


Charles Darwin (1809-1882)

Theory of natural selection and sexual selection explains supposed differences in intelligence between the sexes and 'races'



The Origin of Species, 1858



The Descent of Man, 1871

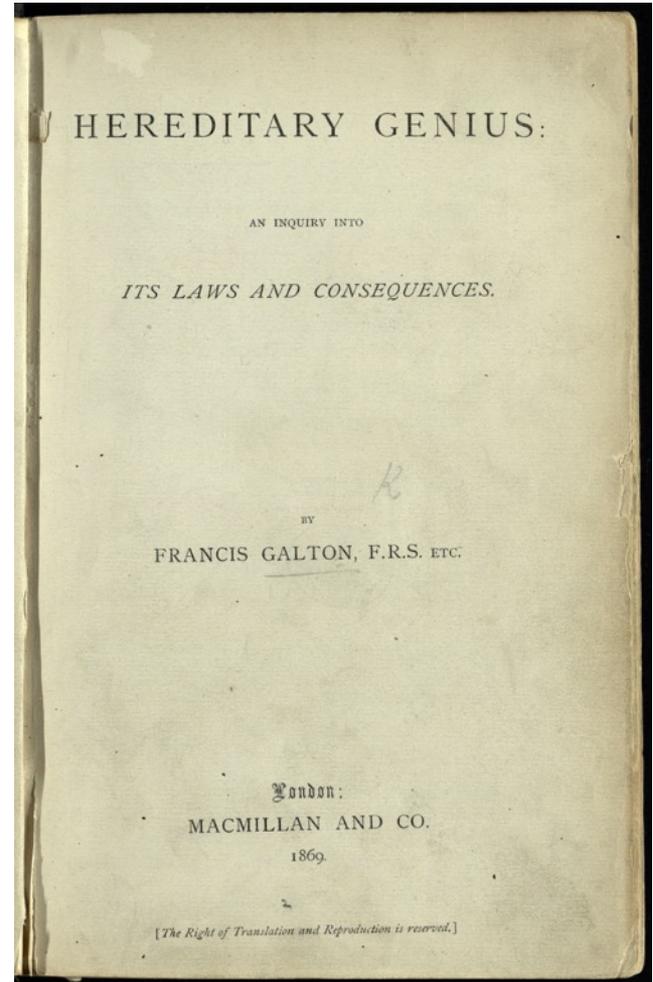
Shields & Bhatia, 2009; Winegard et al., 2020

Francis Galton (1822-1911)

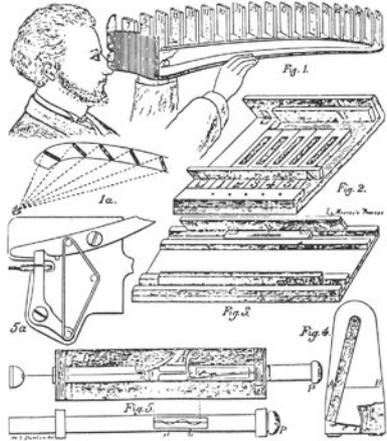
Founder of eugenics, a scientific and social movement, based on Darwin's theories of human evolution, which was originally defined as the science of racial betterment—its name being based on the Greek words for “good” and “born”



Yakushko, 2019;
English Heritage, n.d.

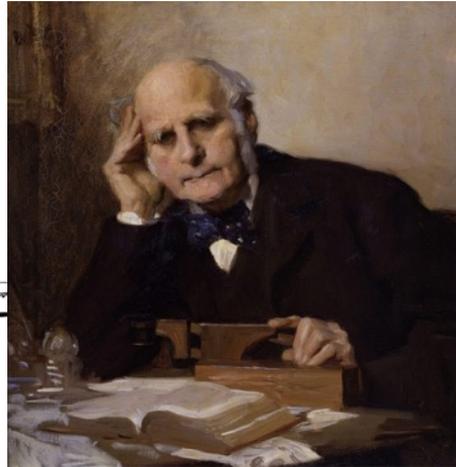


Intelligence Testing – different approaches



From "On the Anthropometric Laboratory at the Last International Health Exhibition" by F. Galton, 1865, *Journal of the Anthropological Institute*, 14, pp. 226-249. In the public domain.

Francis Galton was the first who studied intelligence by formulating a theory and testing it with empirical data



Alfred Binet developed the first intelligence test with Theodore Simon, the Binet-Simon Scale (1905)



*Il ne s'agit que d'expérimenter et d'observer,
cela est vrai, mais que de peine à trouver
la vraie formule de l'expérimentation.*

A. Binet

IQ controversies

- Are differences in intelligence based on genetics or on social and environmental factors? (Nature vs. Nurture; Heritability vs. Malleability)
- Are there group differences and if yes, how can they be explained?
- How is the intelligence research made use of?

Intelligence – Definition & Testing

Etymology

Cicero coined the term intelligence
(,intellegere‘ to understand)



Definition

Most definitions of intelligence incorporate abilities such as problem-solving, abstract reasoning, and the ability to acquire knowledge.

Intelligence Quotient (IQ)

Most common operational definition of intelligence, as measured by contemporary intelligence tests.

Predictive power of IQ

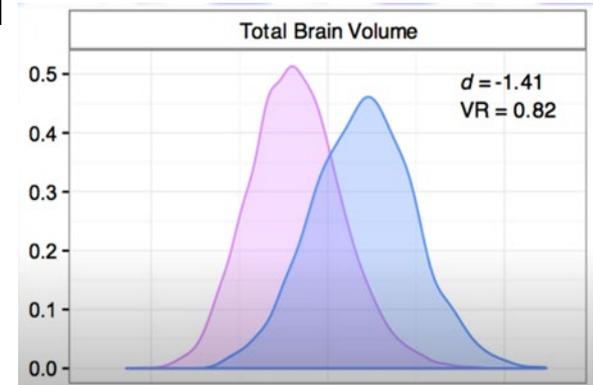
- The correlation of IQ and academic achievement, as measured by standardized tests such as the Wechsler's, typically above 0.60, is perhaps the highest correlation known to the behavioral sciences.
- No evidence of differential prediction of achievement from IQ across 'racial' / ethnic groups has been found.
- At the societal level, regions with higher IQ citizens have been shown to contribute differentially to innovative ideas in business, and the technological and economic progress of nations.



Weiss & Saklofske, 2020

Sex differences in intelligence?

- No difference in general intelligence
- Some differences on specific cognitive abilities
Some favoring men (e.g., spatial reasoning) and others favoring women (e.g., episodic memory, reading and writing)
- Some have argued that men are more variable and thus overrepresented in the extremes of the intelligence distribution
No genetic explanation for differential achievement at the high end
Variation across time and cultures



The debate on genetics, race and intelligence (nature vs. nurture)

Scientific Racism in North American Psychology

- in **1916** mental tests were introduced in the US by psychologist Lewis Terman of Stanford University (Stanford-Binet Intelligence Scale).
Naturalization of inequality
This came to support the eugenics movement “scientifically” by providing the means to analyze human intellectual abilities in quantitative terms;
- In the **late 1930** and **after World War II** mainstream psychology became increasingly liberal and anti-racist
- Renewal of scientific racism during the **civil rights era** and again in the 1970s and 1990s
- the **1970s** the question of group differences became intertwined with heritability research that resulted in the IQ controversy; and
- the **1994** publication of Richard Herrnstein and Charles Murray’s *The Bell Curve*, after which the debate arose again.

Serpico, 2021; Walters, 2021, Winston, 2020

“Resolution of Genetics, Race, and Intelligence.”

Published by Genetics Society of America (GSA) 1976

First draft 1973. In recent years there has been a revival of theories which purport to show inherited differences in intelligence between races and social classes. On the basis of these theories, their proponents have suggested changes in social policy ranging from school segregation to sterilization of the “unfit.” The history of earlier eugenics movements demonstrates that great social damage can result from applications of faulty scientific reasoning. Unfounded theories of race improvement were used in the first part of the 20th century as the “scientific” basis for sterilization laws in 31 states, miscegenation laws, and racially restrictive immigration laws.



“Resolution of Genetics, Race, and Intelligence.”

Scientific critique of the hereditarian theory on 3 questions

- 1) whether IQ scores are an adequate measure of intelligence;
- 2) whether IQ is largely heritable; and
- 3) whether racial and social class differences in IQ are inherited.

→ “THERE IS NO CONVINCING EVIDENCE OF GENETIC DIFFERENCE IN INTELLIGENCE BETWEEN RACES” (capitals in the original)

Ethical critique

Social policies proposed on the basis of hereditarian theories are unwarranted; rather, every child must be considered as a valuable individual rather than as a member of a particular racial or socioeconomic group.

Serpico, 2021

Conceptual Critique & APA Apology

Conceptual critique

Attempts to draw a definitive correlation between 'race' and intelligence are futile, because

- there is no scientific basis for the concept of 'race' and
- there is no universally accepted definition of intelligence, and
- inadequate validity evidence for IQ tests for the majority of validity types

Daley & Onwuegbuzie, 2020

What determines intelligence is best considered within a cultural context

Suzuki et al., 2020

APA Apology (2021)

Apology to People of Color for APA's Role in Promoting, Perpetuating, and Failing to Challenge Racism, Racial Discrimination, and Human Hierarchy in U.S.

The heritability malleability paradox

“What *is* the heritability of IQ?”

The answer: “it depends”!

It depends on not only the genetic contribution to IQ, but also on the degree and type of variability (or lack of variability) in the environment.

Intelligence is a trait with unusual properties that create a large reservoir of hidden gene-environment (GE) networks, allowing for the contribution of high genetic and environmental influences on individual differences in IQ. GE interplay is difficult to specify with current methods, and is underestimated in standard metrics of heritability (thus inflating estimates of “genetic” effects)

Important to acknowledge the malleability together with the heritability of intelligence

Social and environmental influences

Children raised in greener areas have higher IQ, study finds

Research also found lower levels of difficult behaviour in rich and poor neighbourhoods



Air pollution causes 'huge' reduction in intelligence, study reveals

Impact of high levels of toxic air 'is equivalent to having lost a year of education'



- Socioeconomic (SES, Schools)
- Psychosocial (Parenting Style, Role Models, Neighbourhoods)
- Maternal & infant healthcare
- Nutrition
- Green environment
- Clean environment

Bellinger, 2020; Weiss & Saklofske, 2020; Mitchell, 2018; Daley & Onwuegbuzie, 2020; Reuben et al., 2017; Suzuki et al., 2020

Intelligence ascriptions relating to gender

Examples

- Parents think their sons are brighter than their daughters
- Fathers rate themselves more intelligent than mothers (except for emotional intelligence)
- Women are rather described as “caring” and “emotional” than as “competent” or “intelligent”



Consequences

- Many more girls than boys lack confidence in their mathematical and science ability and perform weaker (performance gap closes when level of confidence is taken into account)
- White people can unconsciously increase their self-esteem and cognitive performance

Furnham et al., 2002; Jaxon et al., 2019; Charlesworth & Banaji 2019; Kirkcaldy et al., 2007; Avolio et al., 2020

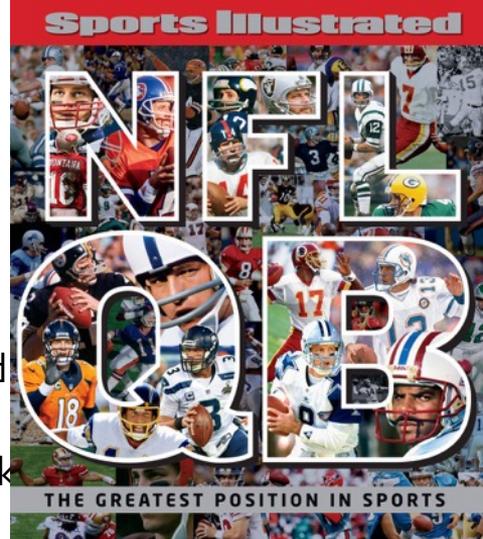
Intelligence ascriptions relating to ,race‘

Examples

- Children associate White men with brilliance, regardless of their own race
- People of Asian descent are often assumed to be intelligent and educated (model minority), whereas Black people are assumed to be unintelligent and uneducated
- Journalists in Sports Illustrated tended to attribute the performance of Black quarterbacks in the NFL to their strong athleticism. In contrast, the performance of White quarterbacks was often attributed to their intellectual abilities
- Biases of physicians against Black people

Consequences

- People of color feel singled out and pigeonholed because of their race and reinforces the notion that they are fundamentally different from White people.
- People of color suffer from racial disparities in the US health system
- White people can unconsciously increase their self-esteem and cognitive performance



Intersectionality

„It’s basically a lens, a prism, for seeing the way in which various forms of inequality often operate together and exacerbate each other. We tend to talk about race inequality as separate from inequality based on gender, class, sexuality or immigrant status. What’s often missing is how some people are subject to all of these, and the experience is not just the sum of its parts.»

Kimberlé Crenshaw



Kimberlé Crenshaw

American Civil Rights Advocate
Professor, UCLA School of Law and
Columbia Law School

Intelligence ascriptions – intersectional consequences

- The more that success in a field was perceived to require brilliance, the more that women – especially women from ‘racial’/ethnic groups that are traditionally underrepresented in academia – and early-career academics felt like impostors
- Women and PoC tend to work «twice as hard» and express a need to be «flawless» (resistance coping)
- Stereotype threat

Unfolding everybody's potential

Awareness of historical patterns of oppression and inequality (Miller et al., 2019)

Close scrutiny of intelligence research (Daley & Onwuegbuzie, 2020), especially from a multi-cultural perspective (Suzuki et al., 2020)

Enhancing visibility of diversity (role models)

Social psychological interventions to tackle educational inequalities

- Values affirmation interventions
- Social belonging interventions
- Difference education interventions
- Growth mindset interventions

(Easterbrook & Hadden, 2021; Turetsky, 2021; Canning et al., 2022)

Creating healthy contexts



Upcoming events CCDI

● **Logib Workshops**, Language: FR, [register here](#)
20 September, 27 September



● **Infoevents «Aiming Higher – Karriereentwicklung für Assistenzärztinnen»**
Dates and soon also registration [here](#)

● **Swiss Leadership, Inclusion, & Diversity Summit**
Save the date: 1 – 3 June 2023

All our offers can also be found at www.ccdi-unisg.ch and updates on upcoming events on our [LinkedIn page](#).

SAVE THE DATE: D&I Week 2023



The 7. St. Gallen Diversity & Inclusion Week will take place from **11 - 15 September 2023!**

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You will find the slides and further information on our website www.inclusion-tagung.ch in a few weeks.

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