Exploring the carbon footprint of different modes of coaching delivery: A first step towards an Environmental Impact Assessment of coaching

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Abstract

Purpose: The purpose of this study is to use environmental impact assessment methods to explore the carbon footprint of different modes of coaching delivery and through this exploratory study to encourage coaching psychologists to deepen their understanding of the topic and the wider impact of their work.

Design: We used a recognised scenarios approach, EIA, to examine different modes of coaching delivery to estimate the carbon impact of different modes.

Finding: Our findings reveal differences in carbon impact from different modes of delivery. The lowest carbon impact is coaching delivered for face-to-face on-site coaching and digital coaching, and increases with physical distance travelled, varying with the mode of travel used and increasing with more energy intensive technologies, such as AI and VR.

Research limitations: The study employed an economic EIA methodology which was dependent on assumptions. We note personal circumstances will vary from the specific example used in this paper with assumptions based on USA data. Further, in some cases the calculations were limited by the use of estimates, but our hope is to generate greater awareness of the environmental impact of the delivery of all services, and that coaching also creates a carbon footprint which varies by mode of delivery.

Practical implications: This study is a first step towards exploring EIA. It argues that coaching psychologists should consider their carbon footprints while organisations should extend environmental considerations to services including L&D.

Social implications: The planet is facing an ecological crisis from global warming. Current organisational and individual practices result in individuals enjoying the benefits of carbon production, while passing the costs of these to future generations.

Originality: Few papers have attempted to examine the environmental impact of workplace practices. The paper seeks to encourage consideration of this issue as part of the organisation procurement of coaching and other professional services.

Keywords: Climate impact, carbon footprint, digital coaching, AI coaching agents, VR coaching, coaching procurement.

Introduction

Global concerns about the environment have risen to the top of the agenda over the past 20 years as the environmental impact of global warming has been recognized by both International agencies and national governments (UN 2013; UN, 2015; Labour, 2024). Global plans have been developed with the aim of creating more sustainable human activity and limiting global temperature increase to below 1.5 degrees (UN 2013; UN, 2015) primarily through reducing carbon emissions. The IPCC's Sixth Assessment Report (AR6) paints a stark picture of the impacts of global warming, projecting severe consequences for natural and human systems if global temperatures continue to rise at the current rate (IPCC, 2021). The report emphasizes the critical importance of limiting global warming to well below 2, preferably to below 1.5 degrees Celsius above pre-industrial levels. However, such a goal necessitates unprecedented change in all aspects of society (IPCC, 2021). In this context it can be argued that changes in the way organizations operate should be part of the overall transition towards a low carbon economy. Given governmental and UN interest, it may be surprising how few researchers have examined the carbon impact of an organizational service, such as coaching, using methodologies such as Environmental Impact Assessments, a methodology now approaching 50 years old (Pope, Bond & Morrison-Saunders, 2013).

What are Environmental Impact Assessments?
Environmental Impact Assessments (EIAs) are systematic processes designed to evaluate the potential environmental effects of proposed projects or developments, such as infrastructure, land use changes or other activities. By identifying, predicting, and analysing the impact of an activity before it is commissioned, EIAs can enhance the decision-making process. EIAs encompass a wide range of ecological aspects, including air and water quality, biodiversity, and community health. For the purposes of this paper we use the UN's Environmental Impact Assessment Guidelines (UNEP 2017). The United Nations EIA definition is contained in Table 1

Table 1: United Nations EIA definition

Environmental Assessment - The entire process of undertaking an objective evaluation and analysis of information designed to support environmental decision making. It applies the judgment of experts to existing knowledge to provide scientifically credible answers to policy –relevant questions, quantifying where possible the level of confidence. It reduces complexity but adds value by summarizing, synthesizing and building scenarios, and identifies consensus by sorting out what is known and widely accepted from what is not known or not agreed. It sensitizes the scientific community to policy needs and the policy community to the scientific basis for action. (UNEP 2017)

EIAs follow a structured methodology that typically includes screening, scoping, impact prediction, and public consultation. While the UN has set out guidelines for large international projects, procedures vary globally, often shaped by national laws and project scale. The effectiveness of the EIA depends on rigorous scientific data, analysis, and sharing the data with consumers to increase awareness. In this way EIAs play a

crucial role in fostering accountability and improving transparency of government and organisational decision making.

Coaching and the environment
In coaching the debate about coaching and climate change has resulted in a small number of publications (see Cox & Flynn, 2022; Whybrow, Turner & McClean, 2021), and the emergence of the Climate Coaching Alliance (2019) which has drawn the support of professional bodies across the sector, including the BPS Division in Coaching Psychology, EMCC, AC and ICF

These publications have highlighted the importance of change, the impact brought by human kind on the planet (DiGirolamo, 2023) or have invited coaching psychologists towards deeper personal self-reflection and individual action (Molthan-Hill et al, 2023; Rhodes et al 2023). What has been missing from the debate so far is data analysis or primary research studies. Questions such as what do coaches feel about climate change? What impact does coaching make on the environment and how can this impact be mitigated? How can coaching psychologists and organisations assess the environmental impacts of different forms of coaching delivery?

The developing nature of coaching
Pre-2010, coaching was largely delivered face to face in most locations in Europe, with phone coaching popular in the US. Coaching was primarily delivered by self-employed, sole traders, working from home, with a collection of small to medium size consulting firms with coaching teams mainly in the 10's of people. By January 2020 a growing number of coaches were using digital communication platforms such as Zoom to deliver coaching. This trend was accelerated by the emergence of Covid-19 and wide spread restrictions on movement and of face to face meetings, which took place between March 2020 and late 2021, with more than 90% of coaches switching to online (Passmore, et al., 2025).

During the 2020's, partly due to advances in technology, partly as a result of Covid-19, partly from the availability of finance for start-up technology businesses, digital coaching businesses, such as BetterUp, EZRA, CoachHub, Sounding Board and AceUp, experienced significant growth as the world workforce went online. These companies, using audio and video communication technologies, have acquired significant market share. We estimate, based on market data (Passmore, et al, 2024), that by late 2026 digital coaching platforms total revenues will be approaching US $1 billion.

Technological advances have continued with the launch in late 2023 of Generative AI (Artificial Intelligence): Chat GPT. Initially starting as an advice-based tool, Generative AI software has been used to develop both counselling and coaching tools. Initial versions were problematic (Passmore & Tee, 2023) but rapid progress is being made in the quality of these tools (Mollick, 2024). This has led to the development of a wide number of AI coaching agents including CAI from EZRA, AIMY from CoachHub, as well as specialist AI coaching providers such as AIcoach.chat and Vici.

A third strand of development in the 2020's has been Virtual Reality and Augmented Reality using what has been termed the 'metaverse'. This has been a popular area for gaming, but work applications have to date been limited. The launch of Apple's Pro Vision device in 2024, and the development of workplace software applications may mark an inflection point. To date the use of VR in coaching has been limited with some experimentation with the tool for team coaching (Strange & Isaacson, 2024), however the application remains under researched.

The result is the coaching delivery crosses multiple modes and includes: (i) face to face, (ii) digital communications platforms, (iii) AI bots (iv) VR-AR metaverse. Each of these brings with them their own advantages and disadvantages from cost, convenience, security and reliability. But while past research has examined impact in terms of coach and client experience and client outcomes (Michalik & Schermuly, 2024) there has been no primary research which examines the environmental impact of different modes of coaching delivery.

This paper seeks to address this question, using an environmental impact assessment approach to examine each of the different modes of delivery and seeking to measure their carbon emissions, with the purpose of stimulating greater awareness by coaches of the impact of their work.

Method
Procedure
In this study we compare different coaching modes and their environmental impact. We selected four different modes of delivery of coaching: (i) face to face, (ii) digital, (iii) AI coaching and (iv) reflect those which are currently most popular, face to face and digital, and those modes which may be considered to be emerging, AI and VR. VR. Prior to our process of data gathering we developed a series of scenarios and hypotheses to test.

General assumptions
For reasons of simplicity we have set aside what we label the supplementary carbon costs. These include the physical elements which enable the face to face meeting, digital or AI session such as the production costs and carbon emissions associated with producing the computer (or digital device), manufacturing the car, train or bus and the equipment in the data centre, nor did we include the electricity costs of heating and lighting the spaces used by occupants, which would vary between times of the year, times of day and location – although we recognise that shared spaces will be more efficient than sole occupancy spaces and well insulated spaces more efficient than heating older or poorly insulated spaces. We also did not include the rare earths used in the computers and the computer systems on the trains, road network etc, rubber used in tires or battery production. But it is important to note that the consumption of these finite resources is not sustainable indefinitely, even when recycling allows a proportion of the item to be recycled, with average rates currently running in the US at around 30% recycled (Krosofsky, 2022). Over time, human activity will exhaust these resources. We

have also set aside the energy costs of offices, homes and other areas where coaching may be occurring. We note these costs will vary between locations.

Secondly, given the scale of the coaching market, which is largest in the US, we have selected US cities and locations, but have included distances, so the data can be applied in different regions.

Third, we recognize different assumptions can be made, but we selected these as being 'reasonable' assumptions for coaching activity using the different modes of delivery and drawing on the best available information. Our purpose is to illustrate the concept of using EIA as a tool applied to coaching to encourage reflection, awareness and discussion. Given the calculations are based on assumptions, variations in data can lead to different outcomes.

Assumptions – Face to face coaching
We gathered data from coaches, but found that variations were wide and varied significantly between geographical locations. Rather than take averages we included four case examples, based on a set of assumptions for a face to face session, which we labelled (i) 'Office-Village', (ii) 'Local', (iii) 'Regional' and (iv) 'International'. The first scenario, 'Office-Village', assumes the individuals (coach and client) work in the same office building or estate. Here the journey is by foot: a walk down some stairs to a different floor or from one building to a neighbouring one on the same site. The same applies to people who might work at home and walk to meet their coach, for example for a lunchtime outdoor coaching session. The second scenario, which we labelled 'Local' would be a session delivered within a 5-mile radius of the coach, for example a coaching session for a local business. We assume this journey would be undertaken by car. For the third scenario, 'Regional', we assumed that the journey would require a car to a local public transport station followed by a train journey. The fourth scenario is defined as an 'International' (or long distance) assignment, which requires a combination of a car to a local station, a train to the airport and plane travel to the final destination. Such assignments are not uncommon in the US, particularly for senior executives. We used these four to illustrate the different aspects of transportation and their impact.

We recognize for Local, that the use of the metro-underground (bus or tram), if travelling in a densely populated city with public transport, like New York or London, would reduce the impact, while a local journey in a rural area may be a longer journey than 5 miles.

We also assumed that only the coach travels to the premises of the client for the coaching session. It should be noted that if both parts need to commute, the carbon footprint would become larger.

We calculated the car, train and plane trips using the most popular online calculator: https://calculator.carbonfootprint.com/calculator.aspx . The site offers its measurements in tonnes so we have undertaken a conversion into grams to allow comparability. While for train trips it allows the user to add the number of miles. For the car, we selected the

US data, and selected the most popular car sold in the US in 2020 (Forbes, 2020): Ford F Series, 150. For trains we based this on a return journey from Stamford to New York, which meets our criteria for an approximate 100 miles (return journey). For flights we assumed a journey from New York to Toronto, being a flight of approximately 1000 miles (return journey).

Again, it should be noted that different planes and trains each have their own unique carbon footprint which varies between vehicles, as noted in our car journey. It should also be noted that manufactures are improving performance and reducing emissions, in all forms of transport. One example is the switch to electric cars and electric buses. But it should be noted that 'low emission' vehicles do not eliminate carbon emissions. They simply shift the emissions to a different part of the process, that is at the stage of electric generation. For example, an electric car may still create significant emissions if the electricity was generated through a coal fired power station, in comparison with hydro-electric power generation.

These assumptions and the variations do not negate the process, they just illustrate the complexity and the need for coaches to attempt to calculate their own unique footprint for a specific project and their specific circumstances, and to attempt to do this with the best data available to them, which as we have illustrated varies widely between geographical locations and their power generation, modes of transport, modes of delivery etc.

Assumptions - Digital coaching

When it comes to digital (online) coaching sessions, we developed two scenarios, reflecting different modes of delivery: audio only and audio plus video sessions. There are also differences of using video calls on standard, high-definition and ultra-high definition (Cibotechnologies, 2021). More importantly, there are also differences depending on which conferencing system or service is used, with Zoom, for instance, producing marginally fewer grams of carbon per minute than Teams, for audio and video calls (Corcuff, 2022). The energy consumption for the three most popular tools used by coaches is summarized in Table 2.

We also surveyed five digital coaching platforms to gather data on carbon emissions, but only one digital provider, was able to highlight their publicly available data relating to their platform. They report 0.0037kg of CO_2 per coaching session. This matches the data available for other communication platforms like Zoom and Teams, summarised in Table 2. The other digital coaching providers do not publicly share their data or do not collect it.

For our purposes, we use the energy consumption for a PC published by Greenspector (Corcuff, 2022) based on 2022 data for a 1-minute videoconference. We focused on two of the three scenarios provided in the published data: audio only, and audio and video. We rejected a third scenario, audio, video + screen sharing, which is less common in coaching, although it is widely used in consulting for presentations and online training. While we assumed connection via a PC, it is worth noting that energy usage is lower, by

around 60% for software applications, when connecting via a mobile device, instead of a PC.

Table 2: Energy consumption on a PC for the most popular digital communication tools

Digital coaching tool	mAh per minute for audio	mAh per minute for audio and video
Google Meet	16	37
Zoom	17	38
Teams	18	41

It is also worth noting that not all digital devices have the same energy usage and thus they will also differ in their carbon footprint. This carbon footprint can be measured not only in energy consumption during usage but across four stages: production, distribution, usage, end of life disposal. Our focus is restricted to the point of use stage. Here differences in sizes, capacity, operational system and brand, all influence the carbon footprint (Sutton-Parker, 2022).

Assumptions - AI coaching bots
AI bots have to date been largely text based. But voice activated software is also being used by some AI coaching providers. As a result, we selected two scenarios: text and voice activation. Accessing data for carbon usage becomes more complex in the use of AI Coachbots. One of the concerns linked to the use of AI, such as ChatGPT-4 is the large amount of energy that is consumed through the servers and data centres required to process the data requests generated from user prompts.

We asked OpenAI's software, Chat GPT-4, its opinion about its own carbon footprint. It estimated its carbon footprint at 1.0g of CO2 per prompt. However, experts have calculated the carbon footprint of a prompt at 4.32g of CO2 (Wong, 2023). It should also be noted that new versions and products, such as Deepseek claim to have significantly reduced energy usage, although such views are contested (O'Donnell, 2025).

Many of the AI coach bots now use Chat-GPT at the core of the product. We surveyed three of the most popular AI text based Coachbot providers. Their prompt rates are summarized in Table 3. These revealed users generate between 55 and 75 prompts per hour. User variations may occur due to a number of factors including the speed of typing, experience of the user and the connection speeds. However, the fundamental factor suggested by one AI bot CTO is the design of the AI tool and how it breaks the coaching process down: The more granular the conversation, the more interactions are needed to progress the conversation, with different designers favouring different approaches.

We used Wong (2023) data and averaged the different AI prompt figures to give a sector average of 67 prompts per hour. This translates to 288g CO2 per hour of AI text-based coaching. We appreciate that these figures will vary by country, period and the

type of query or coaching topic and that AI remains in its early stages of development and thus future developments may lead to changes in energy consumption. It is also important to note that based on our feedback from AI developers' text-based AI conversations are typically usually more task focused and shorter than spoken word conversations and usually lasting 5-20 minutes in length.

A second AI scenario included a voice interface. This creates a smoother user interaction, but also carries with it a higher level of carbon immersion, as it requires both the carbon generated from Chat GPT but also from the voice recognition software. We were unable to identify a total carbon usage figure for software, but based on discussions with CTO's in AI providers they estimate this to be around 50% higher than text-based AI. However, no independently audited data is available.

It is worth also noting that AI coaching agent voice conversations are typically longer than text based), but AI conversations are shorter than human conversations (Passmore et al, In Press).

The most widely used AI coaching bot are text based and for comparability we have converted prompts to an hourly figure.

Assumptions VR coaching
Data for VR is even harder to find than independently validated data for AI software. As a result of technological developments, we note that it is possible to use speech synthesizer software for the output, driven by AI to generate content, and add a photorealistic codex avatar as the visual image (see Fridman, 2024) giving the experience the user is having a conversation with a real person. We see the possibility in the near future of the opportunity, using these technologies, to have a coaching conversation using these technologies with any living (or dead) individual. Clients thus get the opportunity to choose their personal coach, be it Donald Trump, Michelle Obama or Albert Einstein. While there are IP and ethical issues associated with this, the technological barriers are disappearing. By combining AI, speech synthesis and VR energy usage and thus carbon emissions will increase. We estimate this will exceed 1000 g per hour for a speech and codex conversation in the Metaverse. However, as yet no validated data is available. As a result, we concluded we were unable to include these in our results.

We have summarized this complex set of scenarios and the assumptions we used in Table 3.

Table 3: Summary of scenarios

#	Scenario	Assumptions
1	**Office Village Scenario** Face to face (Office-same site: Travel less than 1 mile - walking)	Individuals are based in the same office, office complex or same village less than 1 mile
2	**Local Scenario** Face to Face (Local travel – 10 miles)	Car journey – 10 mile round trip in a Ford Explorer 2WD
3	**Regional Scenario** Face to Face (Regional travel – 100 miles)	Car journey – 10 mile round trip to local train station in a Ford Explorer 2WD Train journey to regional city – 100 miles round trip
4	**International Scenario** Face to Face (International – 1000 miles)	Car journey – 10 mile round trip to local train station in a Ford Explorer 2WD Train journey to regional city airport – 100 miles round trip Flight (1000 miles round trip)
5	**Audio Scenario** Digital coaching - voice	Audio only
6	**Audio-Video Scenario** Digital coaching – voice & vision	Audio & video call
7	**AI Coaching Scenario**	AI coaching agent – Human conversation
8	**VR Traditional Scenario** Metaverse	Using traditional avatars in MeetVR
9	**VR Codex Scenario** Metaverse	Using Codex generated avatars

Ethical approval
Ethical approval for the research was granted through a university ethics committee, approval number: SREC-HBS-20240315-JOPA1494

Results

In reviewing the assumptions, we have calculated the environmental impact for each scenario based on available data as of January 2024. It should be noted that the results are often calculations based on the data available and drawing on the published sources which may include expert estimates.

Face to face coaching
In Scenario 1, Office-Village, we assumed both client and coach were collocated either on the same office site or within close proximity. As a result, with a typical distance of less than 1 mile, the individuals would walk or cycle to meet each other. The carbon impact of walking/cycling, combined with a face to face office conversation would be

zero (0g). A similar impact can be achieved for outdoor coaching, where the coach and client walk as part of the coaching experience, assuming both walk or cycle to the meeting point.

In each of the other three cases, carbon emissions are produced per mile travelled. We used an open source carbon calculator to produce our figures (Carbon Calculator, 2024). For a Local journey, 10-mile round trip to a 'Local' town for a face to face session, using the most popular US car sold in 2020 (a 2020 Ford F Series 2WD), the carbon impact would be 3,990g. In our scenario we based this on a journey in Massachusetts from Springdale to Stamford, USA.

In scenario 3 involved a typical commuter journey to a regional city. We assumed a trip in Massachusetts, USA, from the suburbs of Stamford to New York to deliver a face to face session. This would combine a short car journey to the train station (10-mile return) and a train (100-mile return). For this journey the carbon emissions totalled 9,360g.

In scenario 4 for a longer distance trip, again starting in Massachusetts, we assumed a journey from Springfield via Stamford and New York JFK to Toronto, Canada, involving a combination of a short car journey, train journey and a short flight, the carbon emissions per passenger were calculated to be 380,000g for the return flight from New York to Toronto and a total of 383,660g.

While we are aware of some coaches and consultants making long haul flights to deliver training and coaching, we did not include a long-haul flight scenario, say New York-London. As a guide a transatlantic journey would exceed 2,230,000g (2.23 metric tonnes) in carbon emissions. The carbon emissions by transport type are summarised in Table 4.

Digital coaching
For digital coaching we used energy usage produced in two scenarios. Firstly, audio only and secondly audio and video. We used the carbon emissions on the most widely used digital communication tools for coaching: Zoom. We converted this energy consumption to gram equivalent CO_2 and multiplied the figures by 60 to provide the average carbon emissions for a one-hour digital (online) coaching session Table 5 shows the carbon emissions in grams by digital options. The results show audio and video sessions generate higher carbon emissions than audio only, which is consistent with other research findings (Morris, 2023).

AI Coaching
We used the data from the AI bot with the lowest number of prompts (55) and combined this with figures from the estimated carbon output from Chat GPT (Wong, 2023) 4.3g to give an hourly carbon emissions figure of 237.6g.

Table 4: Carbon emissions by transport type

	Carbon emissions (in g CO2e)		
	Face to face Springdale to Stamford (10-mile car trip)	Face to Face- Springfield via Stamford to New York (Combination 10-mile car and 100-mile Train)	Face to face - Springfield, via Stamford via New York to Toronto approximate Combination 10-mile car, 100-mile Train & 1000-mile flight)
Car (Ford F Series 150 2WD)	3,990	3,990	3,990
Train		5,700	5,700
Plane			380,000
Total impact	3,990	9,690	389,399

(Based on data from Carbon Calculator 2024)

Table 5: Carbon emission by digital options

Mode	Carbon impact
Audio only	0.31 gCO2e x 60 = 18.6 gCO2e
Audio and Video	1.1 gCO2e x 60 = 66 gCO2e

(Corcuff, 2022)

Summary of results

We have summarized all the results in Table 6.

Table 6: Environmental Impact

	Scenario	Assumptions	Carbon Impact
1	Face to face (Office- 100 yards / less than 1 mile)	Individuals are based in the same office, office complex or same village less than 1 mile	0
2	Face to Face (Local – 10 miles)	Car journey in a Ford Explorer (petrol) – 10-mile round trip	4,000g
3	Face to Face (Regional – 100 miles)	Car journey in a Ford Explorer (petrol)– 10-mile round trip, plus a train journey to a regional city – 100 miles round trip	14,000g

4	Face to Face (International – 1000 miles)	Car journey in a Ford Explorer (petrol)– 10-mile round trip, plus a train journey to regional city – 100 miles round trip to a regional city airport, plus a flight (1000-miles round trip)	384,000g
5	Digital coaching	Audio only	18.6g
6	Digital coaching	Audio & video call	66g
7	AI Coaching	AI Coachbot – Human conversation	288g
8	Metaverse	Using traditional avatars in MeetVR	Data not available
9	Metaverse	Using Codex generated avatars	Data not available

Discussion

The lack of primary research on coaching and our own engagement with AI and digital providers and with coaches suggests that climate issues are not a feature of buying decisions by individuals or organisations. When coaching projects commissioned by organisations were focused on delivering coaching for 5 or 10 managers in a single geographical location, the impact was marginal. But as coaching has become a commoditised learning and development intervention, extending to 10,000's of employees in a year, the impact of such programs become worthy of measurement.

Given the results from this study, what should organisations do? We suggest five steps. Firstly, organizations can recognize that like physical goods, services, such as learning and development, also create externalities that may be unseen in the short term. These externalities, including carbon emissions, may have longer term implications for society, individual organizations, and individuals.

Secondly, organizations based on a greater awareness of the impact of service contracts such as in L&D, organisations should start to measure the impact of large-scale service projects, such as coaching, for example when the contract value is greater than a predetermined size, such as $1m pa. Monitoring may involve asking suppliers to provide information about the environmental impact of their services or including environmental criteria in their procurement processes.

Thirdly, organizations, having identified the environmental impact of their activities and asked suppliers to monitor this, organisations can begin to mitigate these impacts. Actions might include shifting towards green energy suppliers, selecting lower carbon choices or offsetting the impact through tree or seaweed planting schemes (WWF, 2024).

Fourth, as with health and safety, diversity and inclusion, and other key business priorities, organizations need to inform and educate their workforce. Bringing environmentally considerations into greater focus and making sustainability part of the organisation's daily cultural practices.

Fifth, we see a role for governments supporting consumers in making better informed sustainable choices. Product and service labelling has helped consumers make more informed food choices, by communicating levels of sugar, salt and fat in products. A similar strategy for energy usage may enable consumers, both individuals and organisations, to make more informed decisions, and may nudge producers towards lower carbon choices.

Lastly, we believe suppliers (and their partners) should seek low carbon forms of energy production through their energy suppliers, choosing green tariffs, with a preference for renewals. Such decisions can help drive the supply industries towards continued investment in these lower carbon forms of energy.

Limitations
The research study uses EIA methodology to explore the impact of coaching. It presents insights into the environmental impacts of different coaching modalities, but our ability to conduct a robust analysis was constrained by several limitations. Firstly, the study is geographically focused on the United States. Different power generation mixes, such as Iceland using primary thermal and hydro for power generation or China where approximately 60% of power is generated by coal fired power stations will lead to different calculations and different environmental impacts. Secondly, variations in transportation modes, and infrastructure across regions will contribute to different environmental footprints. A third limitation of the research is its reliance on estimates, particularly for emerging technologies like AI and VR. The lack of standardized, independently verified data on these technologies' carbon outputs further complicates comparative analyses. Finally, while the study effectively applies Environmental Impact Assessment (EIA) methodology to coaching, it provides limited empirical validation for its assumptions, underlining the need for further research. However, we hope this is a first step towards raising awareness of the environmental impact of coaching.

Conclusion
This study examines the environmental impact of coaching using EIA methodology, which has been widely used in other research, and for other products and services (see Berners-Lee, 2020 for a wider review of different products and services). We believe it is the first study to examine data on the carbon footprint of different modes of coaching delivery, possibly the first study in occupational and organisational psychology. The results confirm that face to face coaching with no travel is the best solution, but that environmental impact can be reduced through using digital delivery instead of travelling by car or other forms of transport. Further AI and VR technologies, if widely adopted, are likely to result in a larger carbon footprint than audio and video communication platforms, unless action is taken to shift energy production away from fossil fuels.

Our purpose through these scenarios is to highlight that coaching carries an environmental impact. Secondly, coaches, psychologists, coaching providers and organisational buyers should include environmental considerations in their design, delivery and procurement.

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