

Wright State University

CORE Scholar

International Symposium on Aviation
Psychology - 2021

International Symposium on Aviation
Psychology

5-1-2021

Pilot Is a Pilot Is a Pilot: Exploration of Effects of National Culture in Helicopter Pilots

Anna Kaminska

Amy Irwin

Devin Ray

Rhona Flinn

Follow this and additional works at: https://corescholar.libraries.wright.edu/isap_2021



Part of the [Other Psychiatry and Psychology Commons](#)

Repository Citation

Kaminska, A., Irwin, A., Ray, D., & Flinn, R. (2021). Pilot Is a Pilot Is a Pilot: Exploration of Effects of National Culture in Helicopter Pilots. *81st International Symposium on Aviation Psychology*, 232-237. https://corescholar.libraries.wright.edu/isap_2021/39

This Article is brought to you for free and open access by the International Symposium on Aviation Psychology at CORE Scholar. It has been accepted for inclusion in International Symposium on Aviation Psychology - 2021 by an authorized administrator of CORE Scholar. For more information, please contact library-corescholar@wright.edu.

PILOT IS A PILOT IS A PILOT: EXPLORATION OF EFFECTS OF NATIONAL CULTURE IN HELICOPTER PILOTS

Anna Kaminska, Amy Irwin, Devin Ray
University of Aberdeen
Aberdeen, UK
Rhona Flin
Robert Gordon University
Aberdeen, UK

Culture has been identified as a factor influencing the way people communicate and behave. Though often imperceptible by its members, cross-cultural interactions can lead to misunderstandings and conflicts. The current study explored how national culture interacts in the cockpit and affects pilots' safety behaviours. The study used in-depth semi-structured interviews with 15 participants (14 helicopter pilots) to collect data on national culture's impact. The data were analysed using conventional content analysis. Content analysis indicated two categories relevant to working with others irrespective of culture and three categories relevant to perceptions of national culture. The findings indicate that pilots acknowledge the cultural differences present between themselves and others, and that culture can have an effect on their and other's safety behaviours. The participants also highlighted the importance of standardisation to overcome cultural influences. This research highlights the various ways in which culture affects pilots' safety behaviours and interactions with one another.

Helmreich and Merritt (1998) suggest that there are three main types of culture: national, organisational and professional. National culture is based on geographic country of origin and is thought to shape people's attitudes and behaviours and influence social interactions. The potential influence of national culture on behaviour has become a growing focus within the safety research as organisations, and teams, become more multi-cultural. Specifically, within aviation, the potential importance of culture has been recognised within crew resource management training (CRM) provision (Anca, 2019). For example, when non-adapted CRM training was first brought to Asia, most pilots did not actively participate in group activities because they viewed the instructor as an authority who should be listened to, rather than somebody to actively discuss material with, crucially reducing training effectiveness (Helmreich & Merritt, 1998). Despite this, 'culture' as a component has only recently been added to the list of CRM curriculum (Flin, 2019) and there is a general lack of up-to-date empirical research exploring the impact of culture in aviation crews. Thus, the current study aims to bridge that gap by exploring how national culture interacts in the cockpit and how it affects pilots' safety behaviours.

National culture

Hofstede's (1984) dimensions of national culture are a commonly used method of studying influences of national culture on various factors, e.g. leadership, accident rates in

aviation, etc. The dimensions are Power Distance, Individualism-Collectivism, Uncertainty Avoidance and Masculinity-Femininity. Soeters and Boer (2000) examined NATO air forces data on total losses from military aviation accident reports and compared them to the individual country scores on Hofstede's four dimensions of culture. The authors found evidence of cultural differences across various national cultures involved in military action (and patrol). They found that air forces with (1) more individualist (more oriented toward work itself) culture have relatively less accidents as they allow themselves to be led by profession-related motives in decision making, rather than organisation-related motives (i.e., less bureaucratic characteristics controlling thoughts and behaviours); (2) greater level of uncertainty avoidance (or regulation orientation) have greater chance of accidents, perhaps due to unwillingness to 'improvise' in a potentially dangerous situation; and (3) greater power distance have relatively more accidents, perhaps due to those in relatively lower power positions not daring to speak up to others in higher power.

A more recent follow up by Enomoto and Geisler (2017) also accounted for weather conditions, GDP per-capita and number of flights in the country. They were able to support Soeters and Boer (2000) findings that countries with higher power distance have a higher amount of plane accidents even when weather conditions and GDP is considered. Thus, the authors underline the importance of training pilots and co-pilots in communication to overcome (national) cultural barriers, such as the feeling of inability to speak out against someone in power or criticise their actions, especially when life is at risk.

Research examining effects of cross-cultural interactions is scarce, and non-existent in regard to helicopter pilots (to author's best knowledge). This is surprising because helicopter flight crews are often comprised of multicultural teams that fly as part of multinational companies. Given the potential issues outlined above, in addition to communication difficulties arising due to a language barrier or different communication styles (van Glinow et al., 2004), it is vital that we improve our understanding of cultural impacts within helicopter crews, particularly in reference to flight safety.

The Current Study

The current exploratory study examined how national culture¹ affects helicopter pilots' safety-related behaviours. Semi-structured interviews were chosen to suit the exploratory nature of the first study and to allow for more in-depth examination of all three culture types. The study had three main aims: (1) to explore pilots' views on the effects of culture on safety behaviours; (2) to determine which aspects of culture are perceived as potential factors that might influence safety behaviours, performance and training; and (3) to determine which aspect of culture is perceived as the most important and / or most likely to influence safety behaviours and performance.

Methods

Participants

Three groups of oil and gas pilots (pilots, trainers and management team) were contacted internally by the company's training lead, and an invitation poster was hung in the break room at

¹ The effects of organisational and professional culture were also explored but are not reported here due to space constraints. Professional culture findings are reported elsewhere.

the heliport. In total 14 participants (2 female) were interviewed: 4 pilots, 6 trainers and 4 managers. Remaining participants ($n = 14$) age ranged from 36 to 64 ($M = 47.20$, $SD = 7.98$). Interviews were conducted both in person ($n = 11$), over video call ($n = 2$) and over the phone ($n = 2$). Most participants (all but one who was only involved in training pilots) were current pilots with varying flight experience. Nine participants were trained in the UK, and six pilots received their training in other countries (e.g., USA, Netherlands, etc.)

The study was approved by the University of Aberdeen, Psychology Ethics committee.

Interviews and Analysis Strategy

Semi-structured interviews took place between January and July 2020. The in-person interviews took place in private meeting rooms at the company's training offices, over-the-phone interviews were conducted at the University of Aberdeen, and video call interviews were conducted from home (both researcher and the participants).

In each interview participant demographic information was sampled, then participants were asked pre-prepared questions in 3 sections, each relevant to a culture type, and one overall question. Participants were encouraged to give full answers and provide examples, where appropriate. This procedure was followed until all questions were covered, whereby participants were asked if there was anything else that they would like to bring up that had not been covered by the interview questions. Throughout the interview process, the researcher remained neutral and inviting, being aware as to not provide physical or verbal (dis)approval to the answers given, apart from context specific facial expressions.

For the analysis, content analysis (Hsieh & Shannon, 2005) was performed. Codes were generated in primarily inductive coding (i.e., the analysis was data-driven (bottom-up) rather than theory-driven (top-down)) with some aspects of deductive coding (i.e., only information related to culture and safety was coded). Data saturation, the point at which no new categories were developed (Guest, Bunce & Johnson, 2006), was reached by the 14th interview.

Results

Working with other people irrespective of culture

Content analysis generated two overarching themes relevant to working with others.

Individual character exerts bigger influence than culture. Half of the pilots ($n = 7$) mentioned that rather than a culture influencing the way a person behaves, they only had issues with certain individuals.

'You can have problems with people from the UK... it's irrelevant.' (Participant #8)

Importance of standardisation for elimination of cultural influences. Many pilots ($n = 6$) observed that numerous cultural issues that could come up are eliminated by strong internal standardisation procedures within the organisation.

'When the company has little or no, um, standardization or very little standardisation, it ends up being up or down to each individual culture.' (Participant #6)

National culture

Content analysis generated three themes relevant to national culture (Table 3).

Table 1.

Themes and codes relevant to national culture.

Theme (definition)	Code
<i>Language barrier can present difficulties:</i> Pilots highlight language barrier as the most prominent national difference that leads to actual in-flight difficulties.	Speaking slower and clearer with non-native speakers ($n = 4$)
	Language can lead to misunderstandings ($n = 2$)
	Language issues become apparent in emergencies ($n = 2$)
	Standardisation mitigates language issues ($n = 1$)
	Working in a second language is more cognitively taxing ($n = 1$)
<i>Minimal differences in Western world:</i> Pilots describe small differences between European or Western pilots, and stress that these differences are minimal due to largely standardized CRM training that was developed in the Western world.	Rules and procedures in UK are strict and safe ($n = 7$)
	Pilots from European/Western countries are very similar ($n = 9$)
	Higher Power Distance in Southern and Eastern countries ($n = 5$)
	Standardised Western training ($n = 4$)
<i>Pilots from outside of EU are different:</i> Pilots describe larger cultural differences impacting flights with non-European pilots.	Low Power Distance in Western cultures ($n = 3$)
	American differences ($n = 5$)
	Arab differences ($n = 3$)
	Relaxed attitude to safety in Africa ($n = 3$)
	Non-European flying can be riskier ($n = 5$)

Language barrier can present difficulties. Most participants mentioned that the biggest national culture influence is the language barrier with non-native English pilots. Some pilots mentioned that it mostly is an issue with understanding accents and having to slow down:

'I can talk quickly and, you know, some guys have asked to just slow down and, erm, struggling to understand.' (Participant #1)

Others also mentioned that it can be an issue due to technical language used in aviation:

'Then he was involved in an emergency... and it turned out he couldn't read the checklist... because A he was under a bit of pressure, and B it's quite technical language using some long words that are very aircraft specific [...]erm, and essentially he was completely unable to manage the emergency.' (Participant #3)

Participants highlighted that non-native English speakers occasionally need to put in more effort into even simple tasks.

Minimal differences in Western world. Pilots described EU pilots as having fairly uniform flight behaviours and attitudes towards safety. Participants characterised power distance in Western Europe to be predominantly low, meaning that co-pilots can challenge their captains without trouble, while more Southern and more Eastern nations have a slightly higher PD. Pilots also noted that most pilots receive the same, standardised Western CRM training:

'Most of the people we fly with, regardless of where they have grown up, tend to have trained in similar areas, just because that's the way it works in aviation.' (Participant #5)

Pilots from outside of EU are different. Pilots described non-EU pilot differences as more significant due to lower standards and regulatory frameworks that are less strict:

'If you trained with regulatory framework being relatively lax, then there's a lot of scope to fly the aircraft however you want to basically and have some fun. [...] Erm, so, for people who are transiting from one area of the world into another, that can be a bit of a challenge.' (Participant #5)

Western pilots were described as being similar in terms of team interactions, but having slight differences in their approach to flying. The higher power distance and 'saving face' (i.e., avoiding embarrassing seniors) was noted in Eastern cultures:

'I flew some senior, erm, Arab officers around... erm, and it really required a huge amount more tact because you couldn't, especially if they had their own guys in the back, you couldn't show them up in any way, shape or form' (Participant #3)

Discussion

The qualitative data from this study provides insight into helicopter pilots' perceptions of culture and its influence on performance, safety behaviours and training. Key themes discussed importance of standardisation, international differences and language barriers.

Previous literature suggests that national culture can have a negative effect on flight safety (Helmreich & Merritt, 1998; Soeters & Boer, 2000), however, the helicopter pilots in our sample did not strongly support this idea. This may be due to the fact that all participants came from the Western world and had limited (if any) experience of interacting or flying with non-Western pilots. The pilots mentioned that there are very small differences between pilots from European countries (and most of the Western world) because of the standardised Western training styles and techniques, along with similar routes to becoming a pilot. This is largely in line with previous literature suggesting that many Western pilots (European, American and Australian) have similar characteristics (Helmreich & Merritt, 1998).

Pilots that did have experience of flying with others from non-Western countries, mentioned that main differences came down to team interactions, rather than actual skills of flying the aircraft. Participants reported instances in which they experienced the higher power distance when flying with Middle Eastern pilots, meaning that if they were in a junior role, they could not challenge the authority of their captain, even when the captain was wrong. Pilots also spoke of the 'saving face' culture in Eastern countries whereby junior pilots cannot embarrass their senior colleagues. These observations are in line with Hofstede's research comparing power distance between Western world and Eastern countries, where it has been found that power distance is higher in the latter. In line with conclusions of researchers (Soeters & Boer, 2000), some pilots observed that the higher power distance seemed to go hand in hand with a higher accident rate in those parts of the world.

The key aspect of national culture that was thought to have an effect on flight safety, and has caused in-flight difficulties, was the language barrier faced by some non-native English speakers. Pilots mentioned that standardised language in the cockpit helps to a certain extent but

can also hinder communication in some instances – due to specialised terminology and ‘difficult words’ that can be harder to pronounce.

A potential limitation of the current study lies in the almost exclusively European (and predominantly British) sample, the majority of whom had only flown with other pilots from European countries. In future studies, we hope to expand out recruitment to such areas of the world as Asia, Latin America and Middle East. The literature discussed earlier (e.g., Helmreich & Merritt, 1998) suggests that these regions differ vastly on Hofstede’s dimensions of culture, with power distance and uncertainty avoidance being of particular interest in their effects on flight safety. Thus, expanding the data collection to these areas will be of benefit to determine if these cultural differences persist and can be distinguished.

Acknowledgements

This work was supported by the Economic and Social Research Council through a collaborative studentship (ES/P000681/1). The research was conducted as part of a doctoral dissertation.

References

- Anca, J. (2019). Cultural issues and crew resource management training. In B.G. Kanki, J. Anca, & T.R. Chidester (Eds.) *Crew resource management (3rd ed.)* (pp. 539-552). San Diego, CA: Academic Press. <https://doi.org/10.1016/B978-0-12-812995-1.00020-8>
- Enomoto, C. E., & Geisler, K. R. (2017). Culture and plane crashes: A cross-country test of the Gladwell hypothesis. *Economics & Sociology, 10*(3), 281-293. doi:10.14254/2071-789X.2017/10-3/20
- Flin, R. (2019). CRM (nontechnical) skills: A European perspective. In B.G. Kanki, J. Anca, & T.R. Chidester (Eds.) *Crew resource management (3rd ed.)* (pp. 185-206). San Diego, CA: Academic Press. <https://doi.org/10.1016/B978-0-12-812995-1.00006-3>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59-82. doi:10.1177/1525822X05279903
- Helmreich, R. L., & Merritt, A. C. (1998). *Culture at work in aviation and medicine: National, organizational and professional influences*. Aldershot, UK: Ashgate.
- Hofstede, G. (1984). *Culture’s consequences: International differences in work-related values*. Newbury Park, CA: SAGE.
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15*(9), 1277-1288. doi:10.1177/1049732305276687
- Soeters, J. L., & Boer, P. C. (2000). Culture and flight safety in military aviation. *The International Journal of Aviation Psychology, 10*(2), 111-133. doi: 10.1207/S15327108IJAP1002_1
- Von Glinow, M. A., Shapiro, D. L., & Brett, J. M. (2004). Can we talk, and should we? Managing emotional conflict in multicultural teams. *The Academy of Management Review, 29*(4), 578-592. <https://doi.org/10.5465/amr.2004.14497611>