

不思議体験の時代比較・国際比較と地磁気

—日本・スロバキアのデータを中心に—

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Historical and International Comparisons of Paranormal Experiences and Geomagnetism

— Focusing on Data from Japan and Slovakia —

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要旨：1990年頃にマクレノンらによって行われた日・米・中の不思議体験調査と同様の調査を2010年代の大学生（日本、スロバキア）と成人（日本）に対して実施し、時代変化と国による体験率の異同を検討した。日本人の不思議体験の時代変化は小さく、体験率は比較的安定していた。スロバキアの大学生は予感（ESPの1種）が81.9%と日米の大学生より30ポイント以上高かった。この相違を生んだ強い環境要因として電源電圧（都市環境電磁雑音レベル）の違いが考えられた。また、1981～1984年に行われた「ヨーロッパ人間価値観調査」のデータを再分析したところ、緯度（地磁気の関連変数）と都市環境電磁雑音レベルが透視・テレパシー体験に影響することが示唆された。

キーワード：不思議体験、ESP、時代比較、国際比較、地磁気、都市環境電磁雑音

Abstract: A questionnaire based on McClenon's 1990 survey of paranormal experiences in Japan, the U.S., and China was conducted on university students (Japan and Slovakia) and adults (Japan) in the 2010s to examine the differences in the experience rates by country and by era. The rates of paranormal experiences of Japanese were relatively stable. Slovak university students reported 81.9% of presentiment (a type of ESP), more than 30 points higher than Japanese and U.S. students. The difference in power supply voltage (the level of electromagnetic noise in the urban environment) was considered to be a strong environmental factor that caused this difference. A reanalysis of data from the European Human Values Survey conducted in

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1981-1984 suggested that latitude (a variable related to geomagnetism) and urban environmental electromagnetic noise level affect clairvoyant and telepathic experiences.

Keywords: paranormal experience, ESP (extra sensory perception), comparison of eras, comparison of countries, geomagnetism, urban electromagnetic noise

1. 不思議体験の調査

虫の知らせや死者気配体験などの不思議体験(特異体験)がどれくらいの頻度で発生しているのか、またどのような心理的・文化的要因と関連するかという問題は古くから人々の関心を集めてきた。

米国のマクレノンによれば、1975年にグリーンリーが米国の人口のほぼ5分の1が、ESP(テレパシー)、透視、死者との接触、神秘的な体験などの超常現象のエピソードを頻繁に体験していることを報告した後、不思議体験の質問を含む社会調査がヨーロッパとアメリカのジャーナリストや研究者によって実施された。それらの調査は、宗教変数と不思議体験との間、あるいは、超常的な信念と宗教心との間に正の有意相関を見いだした場合もあれば、有意相関が見られなかった場合もあったという¹⁾。規模の大きな国際比較調査の例として、1981年から1984年にかけて欧州16カ国、米州・アジア11カ国で実施された対面調査「ヨーロッパ人間価値観調査(The Human Values Survey)」があり、120以上の質問項目の中に不思議体験に関する3項目(テレパシー・透視・死者との接触)が含まれていた。この調査の不思議体験のデータの一部(18607人)を分析したハラルドソン&フトクーパー²⁾によれば、男性より女性の方がテレパシー体験率が高かった、年齢との関係はほとんどなかった、透視はテレパシーより頻度が低かったという。また、体験頻度の違い(テレパシー：19～54%、透視：7～39%、死者との接触：9～41%)の最も大きな要因は国の違いだった。

不思議体験の発生を、霊や魂、死後の生活に対する民間信仰や宗教、あるいは科学的知識の不足で説明しようという仮説を、ハフォードは

文化起因説と総称した³⁾。マクレノン¹⁾は文化起因説に基づいて、米国・日本・中国の大学生の不思議体験(既視感、金縛り、予知、テレパシー、透視、死者気配、第六感信奉)を1986～1990年に調査したが、宗教的嗜好や科学的訓練と不思議体験率とに関係する仮説は支持されなかった。フォックス⁴⁾は米国の一般社会調査の中の不思議体験項目(既視感、テレパシー、透視、死者との接触、神秘主義)について1984年、1988年、1989年の3回分を分析し、不思議体験が主要な社会人口統計学的変数にほとんど依存しなかったことから文化起因説と剥奪説(社会的に疎外されている人が体験しやすいとする説)は支持されなかったと述べている。また、既視感とは質的に他の不思議体験と異なり、他の不思議体験は1因子構造で3回の調査で構造が安定していたことも報告している。

上記で触れなかった他の研究も含め、これまでの研究を通覧すれば、不思議体験を知覚する能力は人間に備わった普遍的能力だが、体験の種類によって生物学的基盤が異なると推定される。また、フォックスの分析したアメリカ成人では透視は72～77%、死者との接触は58～64%で、マクレノンの米国大学生の調査(ESP: 35～44%、死者気配: 20～25%)よりも高率となっていたが、この違いが質問項目の違いで生じた可能性が考えられるので、比較調査においては、体験の種類を一定数確保し、同じ項目を質問することが望ましい。

マクレノンの比較人類学的調査に呼応して、日本でも不思議体験の頻度調査が1990年頃に大学生(萩尾;ベッカー)⁵⁻⁷⁾と医療従事者(郡)⁸⁻¹⁰⁾について実施された。

日本の大学生は米国の大学生と類似の回答傾向が見られた。

郡の調査では医療関係者用の質問が追加され

しており、(1) 死者気配の体験率は年齢・診療科・職種によらず約15%、(2) 既視感・金縛り・幻触は年齢が高くなるほど体験率が低くなり、たとえば看護師では既視感は20歳代で80%なのが50歳代では40%、(3) 患者の体験談を聞いたことがあるという経験や信仰心は高齢になれば増え、中でも高齢の医師は死期予測をよく当てる、(4) 精神科の医師は他科の医療従事者よりも体験率が低い、などが報告されている。

精神科医の体験率が低いことについて、郡は「どうも精神科の医師のみが、学術的には異なった判断基準を持ち合わせているとしか思われません。それともミステリアスな事象を了解したくない結果なのではないでしょうか」と、不思議体験について認知・記憶あるいは回答行動を抑制する何らかの心理バイアスの存在を示唆した。

一方、診療科・職種に関わらず年齢が高いほど既視感・金縛り・幻触の体験率が低かったことについては、郡は「どうも理解に苦しみます」と述べるにとどめている。年齢に関わらず体験率がほぼ一定ならば、体験しやすい人と体験しにくい人とが明瞭に分かれていると仮定すれば説明可能だが、高齢化に伴う体験率の低下を説明するには認知・記憶あるいは回答行動を抑制する心理バイアスを仮定するのが自然だろう。その心理バイアスの背景として考えられるのは、1990年頃は年齢層によって文化的特徴が異なっていた可能性である。1990年頃の50歳代が小中高等学校で教育を受けていたのは1950～60年代であり、当時の日本は生活様式の欧米化が進み、児童の平均身長が年々伸びるなど日本人の体質変化が起っていただけでなく、60年

安保闘争など左翼思想の影響が大きい時代でもあった。具体的にどの要因が不思議体験に対する心理バイアスとして働いたか検討するのは容易でないが、統計数理研究所の「日本人の国民性調査」¹¹⁾のような長期にわたる調査の回答傾向を検討すれば何かしらの手がかりを得られる可能性がある。たとえば、1958年、2008年、2013年の国民性調査では「あなたはあの世というものを信じていますか」という質問が含まれていた。図1に1958年と2008年の年齢層別回答を示す。2008年の40歳代（1990年頃の20歳代に対応）は「信じる」「信じない」が41%対28%なのに対し、1958年の20歳代（1990年頃の50歳代に対応）は13%対67%であり、時代状況が不思議体験に対する心理バイアスを生んでいた可能性がある。

また、マクレノンの調査では、日米の大学生の回答傾向が類似していたのに対し、中国の大学生は回答傾向が異なっていた。不思議体験が人間という生物に備わった普遍的な現象だとしても、地理的条件・物理的条件や社会状況によって現れ方が左右されると考えられるので、どの種の体験がどの環境要因の影響を受けやすいか明らかにする必要がある。たとえば、偶発的な不思議体験が地磁気の日内変動と関係することがパーシンジャーら¹²⁻¹⁵⁾によって指摘されており、また、テレパシーは地磁気変動が小さい日に、予知と死者遭遇体験は地磁気変動の大きい日に起こりやすいという。実験室レベルのESP研究では地磁気の影響に肯定的な結果と否定的な結果があり評価が一定しないが、21世紀に入って、ヨーロッパコマドリの磁気視覚は家電

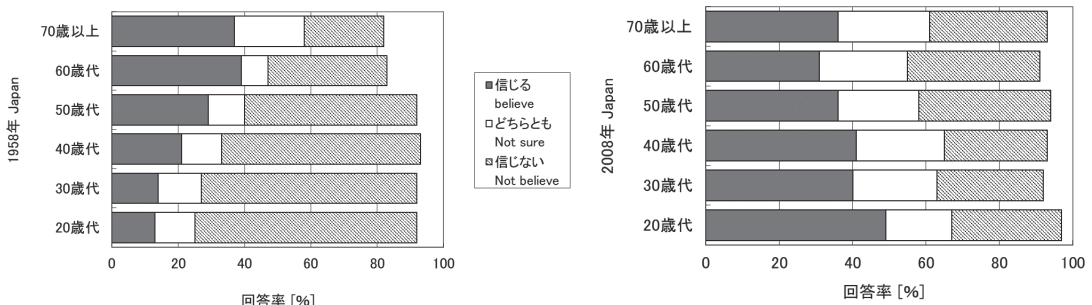


図1 あなたはあの世というものを信じていますか

製品が発する都市環境電磁雑音で乱される¹⁶⁾、牛・鹿が地磁気を感じ取っている¹⁷⁾、人間もマグネタイト型の磁気センサを持っている¹⁸⁾など、生物と地磁気の関係に新たな発見が続いており、不思議体験と地磁気の間を簡単に否定できない状況である。一方、考古地磁気学の研究で過去2000年間の京都の磁気緯度（地磁気の軸を基準とした緯度）が推定された結果、1200年頃は地磁気の軸が現在とは逆に日本の方に傾いていたことが明らかとなっている¹⁹⁾。平安・鎌倉時代の日本は地磁気が強く、しばしばオーロラが見えた²⁰⁾。平安時代に怨霊・怪異信仰が顕著だったことを考えれば、地磁気は不思議体験の環境要因の1つとして考慮されるべきである。また、2010年代はインターネットと情報機器の普及によって不思議体験に関する情報が手軽に入手できるので、1990年頃よりも「体験したという事実」を容認しやすい可能性がある。このような社会変化が不思議体験にどのように影響するか、あるいは影響しないのか確認する必要がある。

2. 2010年代の不思議体験調査と比較対象

ベッカー、萩尾、マクレノンらの調査から20年以上過ぎた2010年代に、筆者らは同様の調査

を大学生（日本、スロバキア）と成人（日本）に対して2件法で実施し、1990年頃のデータと比較することで時代変化が不思議体験に及ぼす影響を、また多国間比較によって地域による異同を検討した。

表1に、この調査に用いた不思議体験と第六感信奉の質問項目を示す。この調査は念力の質問を含んでいないが、ESPに関しては予感（予知）、テレパシー、透視の3種を含んでいる。

調査対象：

群A：2010年代の大学生（日本）

2013～2019年の毎5～6月に跡見学園女子大学、明治大学、和光大学の社会・文化・情報系の学部学生を対象として質問紙調査を実施。1990年のデータと比較するため、社会人学生と留学生を除く18～25歳の学生を対象とし、有効データ数は1527人（男571人、女956人）であった。

群B：2019年の成人（日本）

Yahoo!クラウドソーシングによる調査。不良回答への対策として調査の最後にチェックワードを設け、正しく入力して最後まで回答した参加者にはT-ポイントを10ポイント付与した。調査期間は2019年7月6日14:00～16:55で、回答総数は500人（男331人、女169人）、概算平均年齢は43.7歳だった。

表1 不思議体験の質問一覧

質問1（既視感）	初めて来た場所なのに、前にも来たことがあるような気がしたことがありますか？	・はい ・いいえ
質問2（金縛り）	金縛りにあったことがありますか？	・はい ・いいえ
質問3（予感）	わかるはずのない未来の出来事が予感できたことがありますか？	・はい ・いいえ
質問4（テレパシー）	離れた場所にいる他の人の気持ちが伝わってきたことがありますか？	・はい ・いいえ
質問5（透視）	見えない場所にある物が何であるかわかったことがありますか？	・はい ・いいえ
質問6（体脱体験）	あたかも意識が肉体から抜け出たかのような体験をしたことがありますか？	・はい ・いいえ
質問7（第六感）	第六感と呼ばれるものが本当に存在すると思いますか？	・はい ・いいえ
質問8（死者気配）	死者の気配を感じたり、姿を見たことがありますか？	・はい ・いいえ
質問9	質問1～8以外に、不思議に思うような、あるいは珍しい体験をしたことがあれば書いてください。	

*先行研究では回答は4件法だったが、筆者らの調査では2件法とした。

群C：2019年の大学生（スロバキア）

ジリナ大学の経営・情報学・経営情報学・コンピュータ技術系の学部学生443人の大学生（男300人、女143人）。筆者の1人のプラスコバが日本語版質問紙をスロバキア語に翻訳して実施。

比較対象：

本調査はマクレノンの比較人類学的研究で使われた質問項目に基づいているので、同氏が行った米国・中国の大学生の調査と同氏の質問紙の日本語版に準拠した調査を比較対象とした。また、各群のサンプル数が200以上になるよう、1990年頃の日本人大学生のデータを群Eに集約した。

群D：1991年の医療従事者（日本）⁹⁾

医師・看護師・薬剤師・医療事務等の病院の医療従事者5183人（平均年齢37.3歳）。28都道府県の197施設で、内科系622、外科系375、総合病院1092、精神病院3094、また、男1200、女3869、不明114だった。職種別には、医師428、看護師・薬剤師・検査技師・心理士・事務職3106、病棟婦280、その他1235だった。

群E：1989～1990年の大学生（日本）⁵⁻⁷⁾

有効データ684（筑波大学の寮生132人、鹿児島経済大学（現 鹿児島国際大学）の社会・経済系の心理学受講生552人）。

群F：1986年の大学生（中国）¹⁾

中国・西安にある3つの大学で調査した集約結果で、有効データは314人。

群G：1987年の大学生（米国）¹⁾

メリーランド大学の大学生で、有効データ214人。学生の4分の3以上が白人。

群H：1990年の大学生（米国）¹⁾

ノースカロライナ大学グリーンズボロ校（UNCG）の大学生で、有効データは532人。学生の4分の3以上が白人。UNCGは以前は女子大学だったので、サンプルの67%が女性。

群I：1988年の大学生（米国）¹⁾

エリザベス・シティ州立大学（ECSU）の大学生で、有効データは391人。ノースカロライナ州北東部にある黒人が多い大学。

3. 他者信頼

本調査では、不思議体験の他に、「日本人の国民性調査」から他者信頼の質問3項目を抜粋して使用した（表2）。研究当初は他者信頼が第六感信奉やテレパシー体験に関連する可能性を想定していたが、直接的な関係はなさそうだった。このため、他者信頼の質問は調査対象群が同年齢層の平均的な日本人集団と等質かどうかを簡易的に判断する指標に転用した。調査対象と国民性調査の年齢層が同一でないことと調査方法の違いを考慮し、国民性調査を基準としてその楽観的応答率との差が±10ポイント以内なら（範囲20ポイント以内なら）、調査対象群は同年齢層の日本人集団と基本的に等質と見なした。

4. 分析方針

本報では、次のような方針に基づいて分析・検討を行った。

4.1. 過去のデータと比較するために、筆者らの調査データは透視・予感・テレパシーのいずれかに体験がある場合をESP体験有りとして集約した。

表2 信頼に関する質問と回答選択肢*

質問1 たいていの人は信頼できると思いますか、それとも用心するにこしたことはないと思いますか？	・たいていの人は信頼できると思う。 ・用心した方がよいと思う。
質問2 他人は、隙があればあなたを利用しようとしていると思いますか、それともそんなことはないと思いますか？	・そんなことはないと思う。 ・利用しようとしていると思う。
質問3 たいていの人は、他人の役に立とうとしていると思いますが、それとも、自分のことだけに気を配っていると思いますか？	・他人の役に立とうとしていると思う。 ・自分のことだけに気を配っていると思う。

* 各質問に対する回答選択肢は、上側が楽観的、下側が悲観的応答。

- 4-2. 研究当初は母比率の有意差検定で群間の差の有無を検討していたが²¹⁻²³⁾、本報では回答率のパーセント差の大きさを検討した。また、検討対象とした群は必ずしも無作為抽出群ではなかったため、回答率の群間差が20ポイントを超えれば異なる群と見なし、それ以外は基本的に等質的と見なした。
- 4-3. 2019年の日本人成人で、年齢が高くなるほど既視感・金縛りの体験率が低下するか調べた。
- 4-4. 1991年の50歳代で不思議体験の心理バイアスに関連しそうな要素を、日本人の国民性調査を手掛かりに検討した。日本人の国民性調査は5年ごとに実施されるので、1993年と2013年のデータを比較対象に用いた。基本項目（26項目）を除く147項目から1993年と2013年に共通して実施された64項目を抽出し、1993年の調査で50歳代の回答率が、1993年の20歳代および2013年の20歳代と40歳代の平均から1.96 σ より離れ、かつ、平均から ± 10 ポイントより離れた場合は異なるとみなし、そうでなければ基本的に等質とみなした。
- 4-5. 大学生について、日本・スロバキア・米国・中国のデータを比較した。
- 4-6. 偶発的不思議体験の発生が地磁気変動の大きさと関連するならば、全磁力の大きい場所や高緯度地帯でその傾向が現れる可能性がある。調査地点の地磁気的全磁力と北緯が不思議体験の回答傾向に関連するか検討した。また、追加分析として都市環境電磁雑音レベルを電源電圧で表せると仮定して不思議体験との相関を検討した。
- 4-7. ヨーロッパ人間価値観調査の結果を上記4-6

の方法で再分析した。

5. 結果と考察

5-1. 調査対象群の同質性

表3に他者信頼の結果を示す。群A、Bは国民性調査の楽観的回答率との差が ± 10 ポイント以内であり、それぞれ同年齢層の平均的日本人集団と等質と見なした。しかし、群Cは質問2の楽観的回答率が16.7ポイント高く、スロバキア人大学生と平均的日本人（20歳代）との違いが認められた。なお、他者信頼は大学教育において重要と考えられたので、別報で日本・スロバキアの詳細比較を行った²⁴⁾。

5-2. 群別データ一覧

表4に、本調査と比較データの集約を示す。

5-3. 日本人群（群A、B、D、E）の傾向

図2に日本人（群A、B、D、E）の不思議体験・第六感信奉の肯定回答率を示す。

調査時期、調査対象、調査方法の違いはあっても、各項目とも肯定回答率は20ポイント以内の範囲に分布し、時代・職種による大きな違いはなかった。図2は日本人の一般的傾向を表すと解釈できるだろう。

細かく見ると、死者気配体験率は16～18%となり、ばらつきの範囲は他の項目の1/10（2ポイント）だった。また、1990年頃と2010年代の大学生では金縛り・体脱体験・死者気配はほぼ同じだったが、既視感・ESP体験・第六感信奉で10ポイント以上の差があり、既視感・ESP体験・第六感信奉が時代変化（社会変化）の影響を受けやすいことが示唆された。

表3 他者信頼の楽観的回答率

楽観的回答		筆者らの調査結果			比較対象 (日本人の国民性調査, 2013)	
		群 A 日本 大学生	群 B 日本 成人	群 C スロバキア 大学生	20 歳代	40 歳代
質問 1	信頼できる	40.6%	39.0%	33.0%	36%	37%
質問 2	利用しようとしていない	64.3%	57.2%	81.7%	65%	65%
質問 3	他人の役に立とうとしている	39.4%	37.0%	34.5%	43%	47%

表4 不思議体験・第六感信奉

群	筆者らの調査結果			比較対象群						
	群A	群B	群C	群D	群E	群F	群G	群H	群I	
	日本 大学生, 2013-2019 n = 1527	日本 成人 2019 n = 500	スロバキア 大学生 2019 n = 443	日本 医療従事者 1991 n = 5183	日本 大学生 1989- 1990 n = 684	中国 大学生 1986 n=314	米国 大学生 1987 n=214	米国 大学生 1990 n=532	米国 大学生 1988 n=391	
既視感	72.8%	64.4%	87.8%	67.0%	52.9%	64.0%	89.0%	86.0%	80.0%	
金縛り	34.9%	50.4%	41.1%	43.0%	33.8%	58.0%	37.0%	32.0%	50.0%	
ESP	予感	33.5%	27.4%	73.1%	**34.0%	24.4%	71.0%	44.0%	42.0%	35.0%
	テレパシー	10.9%	15.2%	28.7%						
	透視	7.4%	12.8%	43.1%						
体脱体験	10.6%	18.2%	26.4%	12.0%	6.1%	55.0%	27.0%	18.0%	18.0%	
死者気配	17.4%	18.0%	30.5%	16.0%	17.1%	40.0%	25.0%	20.0%	25.0%	
第六感	56.1%	71.6%	68.8%	54.0%	71.3%	76.0%	66.0%	60.0%	68.0%	

* 過去のデータと比較するために、筆者らの調査結果は透視・予感・テレパシーのいずれかに体験がある場合をESP体験有りとして集約してある。

** 郡の調査の靈感をESPとして扱った。

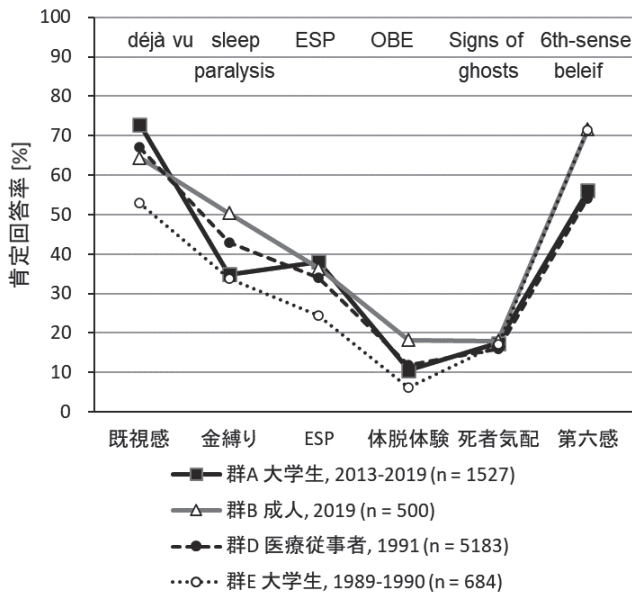


図2 日本人の不思議体験・第六感信奉

5-4. 年齢と既視感・金縛りの体験率

日本人成人（群B）で年齢層別の詳細を表5に示す。層の人数が100人以上の30歳代～50歳代では、年齢とともに既視感・金縛りの体験率が低下する傾向は見られなかった。また、他の不思議体験でも体験率の低下傾向はなく、3～8ポイントの範囲に収まり、ほぼ一定だった。年齢層の違いが目立った1991年の医療従事者に比べ、2019年の成人はより均質的といえた。

群Bのデータはクラウド調査の結果であるから、情報化社会に十分に適応した成人の回答傾

向と解釈できる。彼らは不思議体験を含む種々の情報や意見に接する機会に恵まれており、情報化時代以前の世代に比べて年齢による知見の広さの違いが小さいと推測される。このため、不思議体験に対する抑制バイアスの年齢均一化が起りやすいのだろう。

5-4. 1993年の50歳代と他世代との相違

日本人の国民性調査1993年と2013年に共通して実施された64の質問のうち、1993年の調査の50歳代の回答率が、1993年の20歳代および2013

表5 日本人成人（2019）の不思議体験・第六感信奉

年齢層	人数	既視感	金縛り	ESP	内訳			体脱体験	死者気配	第六感信奉
					予感	テレパシー	透視			
20歳未満	4	100.0%	0.0%	75.0%	50.0%	25.0%	50.0%	0.0%	75.0%	100.0%
20歳代	49	51.0%	36.7%	40.8%	26.5%	16.3%	20.4%	20.4%	22.4%	55.1%
30歳代	103	59.2%	48.5%	33.0%	24.3%	12.6%	16.5%	12.6%	19.4%	73.8%
40歳代	198	67.7%	54.5%	33.3%	25.8%	13.1%	9.6%	19.7%	15.7%	71.2%
50歳代	110	68.2%	50.9%	40.9%	31.8%	20.0%	10.9%	20.9%	20.9%	71.8%
60歳代	28	71.4%	60.7%	39.3%	28.6%	17.9%	10.7%	21.4%	7.1%	96.4%
70歳代	7	42.9%	42.9%	42.9%	42.9%	14.3%	14.3%	0.0%	0.0%	57.1%
80歳以上	1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

年の20歳代と40歳代の3群平均から±1.96σより離れ、かつ、群平均から±10ポイントより離れていたのは16項目だった（表6,7）。

この16項目をグループ化（表6）して解釈を試みると、1993年の50歳代は他の世代より、

- (1) 将来への備えや選挙を重視する。
- (2) 個人の満足感よりも仕事のしやすさを重視し、精神的に安定で、信仰心が厚く、日常生活が大きく変化することを好まない。

とまとめることができる。

(1) は1960年代の高度経済成長時代（経済成長率が年平均10%を超えた）に急速な物質的生活の向上と物価上昇や公害を体験したという時

代性をうかがわせる。一方、(2) から、より実務的で精神的安定を好む傾向が読み取れる。この傾向によって、実用性を感じにくく、かつ、説明困難で不安を呼びかねない不思議体験の認知・記憶・回答行動が抑制されやすいと仮定すれば、群Dの医療従事者で見られた高齢化に伴う既視感・金縛り・幻触体験率の低下を説明できる。残念ながら、群Dの50歳代にこの仮定が実際に当てはまるか確認する方法がなく、また、1993年に実施されなかった質問に抑制バイアスに関連する項目が含まれている可能性があるため、現時点では仮説の提唱には至らない。しかし、今後、文化圏間・世代間の体験率の違いを

表6 1993年の50歳代と他世代との相違

解釈	差のあった16項目	1993年の50歳代の回答傾向	対応する3群の平均
生活がまだ十分でない	#2.13 将来に備えるか楽しむか	73%が将来に備えると回答。	62%
	#4.5 子供に「金は大切」と教える	47%が大切と教えると回答。	20%
	#9.17 地球環境	生活の利便さより環境保護を重視するのは75%。	87%
社会全体への関心	#7.4 日本と個人の幸福	37%が、日本が良くなって、はじめて個人が幸福になるを選択。	22%
	#8.6 選挙への関心	49%が、なにをおいても投票を選択。	22%
仕事のしやすさを重視	#5.6b つとめたい会社	69%が家族的な雰囲気のある会社と回答。	46%
	#5.6h 他人との仲が仕事か	仕事のできる人より他人と仲のよい人が望ましいと回答したのは70%。	84%
	#7.24 就職の第1の条件	やり遂げたという感じもてる仕事を選択したのは32%。	43%
精神的に安定	#2.80c 病気 いらいら	68%がいらいらにかかったことがないと回答。	41%
	#9.6 日本人・西洋人の優劣	52%が日本人はすぐれていると回答。	34%
信仰心が厚い	#3.1 宗教を信じるか	34%が信じていると回答。	17%
	#3.2b 「宗教心」は大切か	79%が大切と回答。	56%
	#4.11 先祖を尊ぶか	76%が尊ぶと回答。	49%
変化より安定を好む	#5.24 勤め先を変えるか	変わった方がよいと回答したのは32%。	63%
	#9.14 外国人との結婚	自分の子供が外国人と結婚するといわれたら賛成すると回答したのは31%。	58%
その他	#6.5 男女の能力差	60%が能力差があると回答。	43%

表7 1993年の50歳代と他世代の回答率が同じと判断された48項目

#2.1 しきりに従うか	#2.11 好きなくらし方か人のためか	#5.1d 大切な道徳	#7.30a 生活水準 10年の変化
#2.2b スジかまるくか	#2.12 他人のためか自分のためか	#5.6 めんどろをみる課長	#7.35 環境の保護は重要か
#2.3c 家庭に満足か	#2.12b スキがあれば利用されるか	#5.23 能力か功労か	#7.36 科学上の発見・利用は生活に役立つか
#2.3d 社会に満足か	#2.12c 人は信頼できるか	#6.2 男・女の生まれかわり	#7.40 社会は公平か
#2.3i 仕事や職場に満足か	#2.80a 病気 頭痛	#6.2e 男の子と女の子	#8.1b 政治家にまかせるか
#2.3j 余暇に満足か	#2.80e 病気 不眠症	#7.1 人間らしさはへるか	#8.9 社会不満の表し方
#2.3k 健康状態に満足か	#4.4 先生が悪いことをした	#7.2 心の豊かさはへらないか	#9.12 日本の「科学技術の水準」
#2.3l 生活全体に満足か	#4.10 他人の子供を養子にするか	#7.4b 国の繁栄と国民の生活	#9.12b 日本の「芸術」
#2.4 くらし方	#5.1 恩人がキトクするとき	#7.19 才能か運か	#9.12c 日本の「経済力」
#2.5 自然と人間との関係	#5.1b 親がキトクするとき	#7.24b 就職の第2の条件	#9.12d 日本の「生活水準」
#2.7 一番大切なもの	#5.1c1 入社試験(親戚)	#7.25 お金と仕事	#9.12e 日本の「心の豊かさ」
#2.8 一生働くか	#5.1c2 入社試験(恩人の子)	#7.29 くらしむき	#9.16 国際貢献

検討するときには、広範な思考傾向に着目する必要性を感じさせる。

5-5. 大学生の多国間比較

図3に日本・スロバキア・中国・米国の大学生(群A、C、E~I)の不思議体験・第六感信奉を示す。

日本と米国の大学生(群A、E、G~I)は、既視感が高く(52.9~89.0%)、金縛りとESP体験が中程度(34.9~50.0%)、体脱体験と死者気配が低く(6.1~25.0%)、第六感信奉が56.1~68.0%という似た傾向を示した。また、米国の大学生のデータのばらつき範囲は10ポイント以下で、最小は死者気配の5ポイントであった。

スロバキアの大学生(群C)はESP体験を除いて日本・米国の大学生と類似していた。ESP体験は81.9%と日本・米国の大学生より30ポイント以上高く、特にESP体験のうちの予感(日本大学生(群A)を40ポイント近く上回っていた(表4))。また、透視がテレパシーより多いという点も異なっていた。スロバキアの大学生は他者信頼の回答傾向が日本の大学生(群A)と異なっていたので、測定していない種々の側面でも日本の大学生と文化的傾向が異なると推定される。したがって、体験率に多少の違いが

あってもおかしくないが、ESP体験(特に予感)でこれほど顕著な違いが生じるには「多少の違い」を超えた、もっと強い要因の影響が推定される。

「強い要因」を検討する上で、1986年の中国・西安の大学生(群F)との比較が有益だろう。群FはESP体験と体脱体験で日本・米国の大学生より20ポイント以上高く、また金縛りと死者気配も8~10ポイント高い。特に、ESP体験が日本・米国を上回るという点がスロバキアの大学生と共通する。2019年のスロバキアと1986年の中国にESP体験を増加させる何らかの共通要因の存在が考えられるが、その要因は民主主義国と共産主義国、情報化時代とそれ以前という社会状況の違いにあまり影響されず、かつ、日本・米国と異なるという特徴を持っているはずである。現在の中国のデータや過去のスロバキアのデータが入手できれば要因候補を議論しやすいが、本報では現時点のデータから要因候補の検討を試みる。次項では、最も規模の大きい環境要因候補として地磁気を中心に検討する。

5-6. 地磁気・都市環境電磁雑音との相関

地磁気の算出地点は調査の行われた大学校舎の場所を原則としたが、群A、Eは複数の大学に

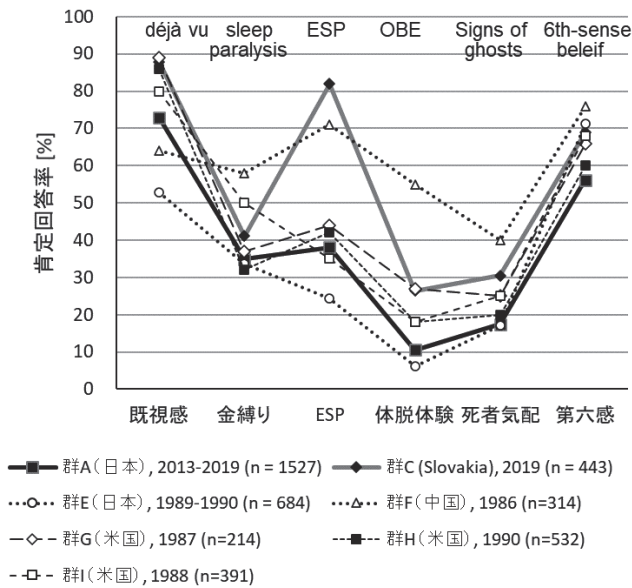


図3 大学生の不思議体験・第六感信奉

またがっていたので、群Aは明治大学和泉校舎を、群Eは鹿児島経済大学（現 鹿児島国際大学）を代表地点とした。また、群Fは中国の西安市を代表地点とした。緯度・経度・標高の決定にはGoogle Earthを用い、全磁力をIGRF-13²⁵⁾によるモデル磁場計算²⁶⁾で算出した（表8）。

結果、全磁力との相関係数は既視感が $r = 0.62$ で最も大きかったが統計的有意には至らなかった（ $p = 0.141$, 両側, $n = 7$ ）。北緯との相関係数は既視感が $r = 0.69$ 、ESP体験が $r = 0.72$ だったが、これらも統計的有意には至らなかった（ $p = 0.086$, 両側, $n = 7$; $p = 0.070$, 両側, $n = 7$ ）。全磁

力・緯度ともに静的変数であり、地磁気変動の大きさを表す間接的指標として十分でなかった可能性が考えられるが、今回の分析対象地点が北緯34度～49度の中低緯度～中緯度地帯だけだったので、低緯度地帯と高緯度地帯を加えて検討する必要があるだろう。

地磁気との関係を分析するとき、都市環境電磁雑音レベルの影響も検討するのが理想である。試みとして、都市環境電磁雑音レベルを一般家庭の電源電圧で表せると仮定し、不思議体験との相関を追加分析した。各国の電源電圧は、日本：100V、米国：120V、中国：220V、スロバ

表8 モデル磁場計算

群	場所	年	緯度・経度	標高 [m]	IGRF-13によるモデル磁場計算
群 A	明治大学(和泉校舎)	2019	N35度 40分 E139度 39分	39	全磁力 (F): 46667.3 nT
群 C	University of Žilina	2019	N49度 12分 E18度 45分	392	全磁力 (F): 49236.6 nT
群 E	鹿児島経済大学	1990	N31度 29分 E130度 30分	53	全磁力 (F): 46326.5 nT
群 F	西安	1990	N34度 16分 E108度 57分	405	全磁力 (F): 51794.5 nT
群 G	University of Maryland	1990	N38度 59分 W76度 56分	37	全磁力 (F): 54552.1 nT
群 H	Elizabeth City State University	1990	N36度 1分 W76度 13分	2	全磁力 (F): 52901.5 nT
群 I	University of North Carolina, Greensboro	1990	N36度 4分 W79度 48分	249	全磁力 (F): 53391.5 nT

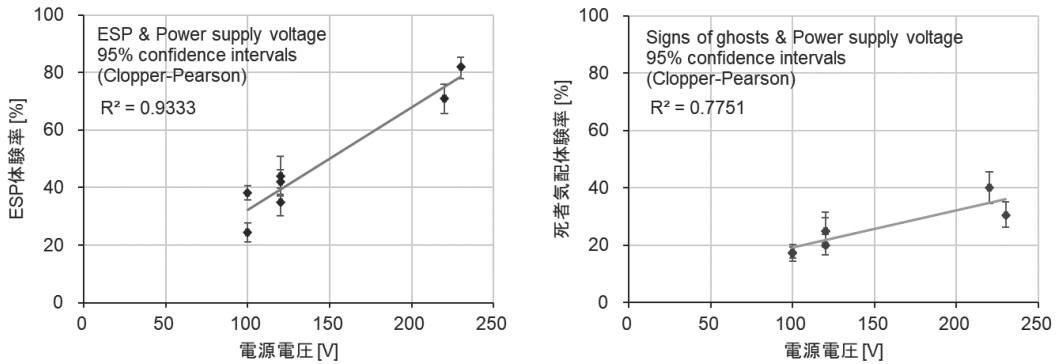


図4 4カ国の電源電圧とESP体験率・死者気配体験率（大学生）
誤差棒は95%信頼区間（Clopper-Pearson）。

キア：230Vである。不思議体験との相関を調べると、ESP体験率と電源電圧との間に正の有意相関があった ($r = 0.97, p = 0.0004$, 両側, $n = 7$) (図4)。また、死者気配と電源電圧との間にも正の有意相関があったが ($r = 0.88, p = 0.009$, 両側, $n = 7$)、死者気配のポイント差は最大22.9ポイントだったので、電源電圧が関係したとしてもその影響は弱いと考えられた。

スロバキアのESP体験の内訳を見ると、テレパシー 28.7%、透視43.1%に対して予感とは2倍近い73.1%であり (表4)、ESP体験の大部分を占めているので、電源電圧の影響は予感に現れやすいと考えられる。この結果は、偶発的不思議体験のうち予知・死者気配は地磁気変動の大きい日に発生しやすいこととも整合性がある。電源電圧は、社会状況の違いにあまり影響されず、かつ、日本・米国と異なるという条件を満たしており、スロバキアの高ESP体験率（予感体験率）を説明する環境要因候補の1つである。

5-7. 「ヨーロッパ人間価値観調査」と全磁力・北緯・電源電圧

「ヨーロッパ人間価値観調査」で各国の首都を各国の代表地点とすれば、全磁力・北緯、さらに電源電圧について前項と同様の検討が可能である。

表9に、ヨーロッパ人間価値観調査の各国別データ²⁾とともに、1990年の全磁力の計算値を示す。北緯37度～64度の中低緯度～高低緯度地帯の15カ国のデータを再分析した。電源電圧は

「地球の歩き方」²⁷⁾を参照し、低電圧の値を基準とした。

透視と全磁力の相関係数は $r = -0.22$ ($p = 0.434$, 両側, $n = 15$) で相関が見られなかったが、北緯との相関は $r = -0.74$ ($p = 0.002$, 両側, $n = 15$) で統計的有意な負相関であった (図5)。また、テレパシーと死者との接触は $-0.33 \leq r \leq 0.12$ であり、全磁力・北緯ともに相関が見られなかった。

電源電圧との関係では、テレパシーが $r = -0.55$ ($p = 0.041$, 両側, $n = 15$) で中程度の負相関があったが、透視・死者との交流はともに $r = -0.31$ ($p = 0.28$, 両側, $n = 15$) で相関は見られなかった。

電源電圧は多くの国が220V～230Vで120Vのデータは米国しかなかったので、図5に見られる負相関は結果として都市環境電磁雑音レベルの違いがある程度除去されたものになっている。このヨーロッパ人間価値観調査のデータから、地磁気変動の影響が大きい高緯度地帯で透視体験が抑制されやすいこと、また、緯度の範囲を十分広く取らなければ緯度の影響の検出がむずかしいことがわかる。

テレパシーは緯度よりも都市環境電磁雑音レベルが影響しやすいことが示唆されたが、これは1点しかない米国のデータの影響が大きいので、さらにデータを加えて検討する必要がある。

死者との接触は、緯度・都市環境電磁雑音レベルのどちらの影響も見いだせなかった。

以上の分析から、電磁現象への応答特性は不

表9 全磁力（1990年）とヨーロッパ人間価値観調査の各国別データ（成人）

国	n	首都の北緯	経度	標高 [m]	全磁力 [nT]	電源電圧 [V]	テレパシー [%]	透視 [%]	死者との接触 [%]
France	1200	48度 51分	E 2度 21分	34	47350.1	220	34	24	24
Italy	1348	41度 54分	E 12度 29分	31	45637.5	220	41	39	34
Spain	2303	40度 25分	W 3度 42分	654	44233.4	230	21	14	16
Belgium	1145	50度 53分	E 4度 17分	55	47993.7	220	21	14	18
Great Britain	1231	51度 30分	E 0度 8分	22	48093.8	220	36	14	26
West Germany	1305	52度 31分	E 13度 24分	38	48789.9	230	39	17	28
Holland	1221	52度 22分	E 4度 54分	-1	48417.7	230	29	12	12
Ireland	1217	53度 21分	W 6度 16分	-1	48659.3	220	19	11	16
Denmark	1182	55度 41分	E 12度 34分	12	49503.6	220	15	12	10
Finland	1003	60度 10分	E 24度 56分	13	51196.2	220	40	15	14
Iceland	927	64度 9分	W 21度 56分	7	52139.1	220	34	7	41
Norway	1426	59度 55分	E 10度 45分	5	50371.5	230	17	7	9
Sweden	954	59度 20分	E 18度 4分	12	50569.6	220	24	7	14
韓国	942	37度 34分	E 126度 59分	30	50675.9	220	48	25	23
米国	2325	38度 54分	W 77度 2分	26	54525.8	120	54	25	30
欧州全体							34	21	25

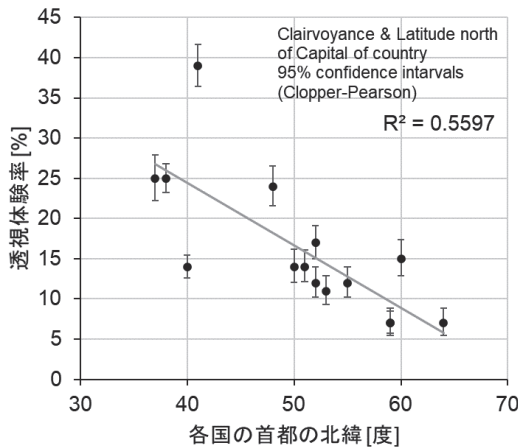


図5 ヨーロッパ人間価値観調査（成人）における透視と北緯との相関
誤差棒は95%信頼区間（Clopper-Pearson）。

不思議体験の種類によって異なると考えられる。不思議体験の発現機構の違いを知る手がかりともなり得るので、電磁現象と不思議体験の関係は、今後、様々な観点から検討する必要がある。

なお、ヨーロッパ人間価値観調査は成人を対象としており、また、調査方法・質問項目が異なっているので、筆者らのデータとの直接比較がむずかしかった。また、電源電圧も日本では近年単相100Vに加えて三相200Vも普及が進みつつあり、さらに東日本では50Hz、西日本では60Hzと周波数が異なる。EU圏でも単相230V

／三相400Vに切り替わってきており、都市環境電磁雑音レベルの評価は今後の課題である。

6. 結論

日本人の不思議体験は、調査時期、調査対象、調査方法による大きな違いはなかった。体験率が比較的安定していたことから体験しやすい人と体験しにくい人とに分かれている可能性が示唆された。

日本と米国の大学生は、既視感が高く（52.9～89.0%）、金縛りとESP体験が中程度（34.9～50.0%）、体脱体験と死者気配が低く（6.1～25.0%）、第六感信奉率が56.1～68.0%という似た傾向を示した。スロバキアの大学生は日米の大学生と類似していたが、ESP体験は81.9%と日米の大学生より30ポイント以上高く、特にESP体験のうちの予感日本の大学生を40ポイント近く上回っていた。この相違を生じた強い環境要因として電源電圧の可能性が示唆された。同様の手法で1981～1984年に行われた「ヨーロッパ人間価値観調査」のデータ（成人）を再分析したところ、緯度・都市環境電磁雑音レベルが透視・テレパシーに影響し、さらにその影響は体験の種類によって異なっていた。不思議体験は種類によって電磁現象に対する応答特性が異なると考えられた。電磁現象と不思議体験の関

係は、今後、様々な観点から検討する必要がある。

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Historical and International Comparisons of Paranormal Experiences and Geomagnetism - Focusing on Data from Japan and Slovakia -

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Abstract:

A questionnaire based on McClenon's 1990 survey of paranormal experiences in Japan, the U.S., and China was conducted on university students (Japan and Slovakia) and adults (Japan) in the 2010s to examine the differences in the experience rates by country and by era. The rates of paranormal experiences of Japanese were relatively stable. Slovak university students reported 81.9% of presentiment (a type of ESP), more than 30 points higher than Japanese and U.S. students. The difference in power supply voltage (the level of electromagnetic noise in the urban environment) was considered to be a strong environmental factor that caused this difference. A reanalysis of data from the European Human Values Survey conducted in 1981-1984 suggested that latitude (a variable related to geomagnetism) and urban environmental electromagnetic noise level affect clairvoyant and telepathic experiences.

Keywords:

paranormal experience, ESP (extra sensory perception), comparison of eras, comparison of countries, geomagnetism, urban electromagnetic noise

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1. Survey on Paranormal Experience

A question of how often paranormal experiences such as the presence of the dead occur, and what psychological and cultural factors are associated with them, has long been of interest to people.

McClenon (USA)¹⁾ noted that after Greeley reported in 1975 that almost one-fifth of the U.S. population frequently experienced episodes of paranormal phenomena such as ESP (telepathy), contact with the dead, clairvoyance, and anomalous experiences, social surveys that included questions about paranormal experiences were conducted by journalists and researchers in Europe and the United States. In some cases, they found positive significant correlations between religious variables and magical experiences, or between paranormal beliefs and religiosity, while in other cases no significant correlations were found. An example of a large-scale international comparative survey is The Human Values Survey, a face-to-face survey conducted in 16 European countries and 11 countries in the Americas and Asia since 1981 to 1984. Among the more than 120 questions asked, three questions of paranormal experiences (telepathy, clairvoyance, and contact with the dead) were included. Haraldson & Houtkooper²⁾ analyzed some of the paranormal experience data (18,607 people) from this survey, and founded that women had higher rates of telepathic experiences than men, that there was little relationship to age, that clairvoyance was less frequent than telepathy, and that the most significant factor in the difference in frequency of experience (telepathy: 19-54%, clairvoyance: 7-39%, contact with the dead: 9-41%) was the difference in country. The hypothesis that the occurrence of paranormal experiences can be explained by folk beliefs and religions about spirits, souls, and life after death, or by a lack of scientific knowledge, was labeled as the cultural source theory by Hufford³⁾. McClenon¹⁾ tested the cultural source hypothesis through his surveys of paranormal experiences (déjà vu, sleep paralysis, clairvoyance, precognition, telepathy, sign of ghost, belief of sixth-sense) for students in USA, Japan, and China in 1986-1990, and reported that both religion and education of science did not correlate to paranormal experiences, and that the culture source hypothesis was not supported. Fox⁴⁾ analyzed paranormal experiences (déjà vu, telepathy, clairvoyance, contact with the dead, and mysticism) in data of the general social surveys of Americans in 1984, 1988, and 1989. He reported that the deprivation theory (which states that socially marginalized people are more likely to experience paranormal) was not supported, that déjà vu was qualitatively different from other paranormal experiences, and that other paranormal experiences had a one-factor structure that was stable across the three surveys.

Many studies on paranormal experiences suggest that the human being has common ability to experience paranormal experiences and that those experiences are based on different biological mechanisms. Additionally, Americans' experience rates were 72-77% for clairvoyance and 58-64% for contact with dead by Fox, while students' experience rates were 35-44% for ESP and 20-25% signs of dead by McClenon. This difference seems to be caused by difference of questionnaire terms between their studies. Therefore, it is better to make several questions on paranormal experiences and use the same terms for comparative studies.

Around 1990 in Japan, frequency of paranormal experiences⁵⁻⁷⁾ was surveyed for students (Hagio; Becker)⁵⁻⁷⁾ and medical staffs (Kohri)⁸⁻¹⁰⁾ based on McClenon's survey.

Japanese university students tended to answer similarly to their U.S. students.

Kohri added additional questions for medical staffs, and reported results as follows,

- (1) The rate of experiencing the presence of the dead was about 15% regardless of age, department, or occupation.
- (2) The experience rates of déjà vu, sleep paralysis, and phantom touch became lower as the age of the respondents increased. For example, for nurses in their 20s, the rate of déjà vu was 80%, but for those in their 50s, it was 40%.
- (3) Experiences of having heard about patients' paranormal experiences and religious beliefs increase with age, and elderly medical doctors answered they could make good predictions about the time of patients' deaths.
- (4) Psychiatrists have a lower experience rate than health care workers in other departments.

Kohri's results were considered that the majority of respondents responded sincerely.

For a result that psychiatrists had a lower experience rate, Kohri commented "Apparently, only psychiatrists have a different set of academic criteria. Or is it a result of not wanting to understand mysterious events?" His comment suggests existence of some psychological biases against paranormal which inhibit recognition, memory, or answering behavior.

On the other hand, as for the fact that the elder staffs regardless of department or occupation showed the lower the rates of experiencing déjà vu, sleep paralysis, and phantom touch, he only said, "I don't understand it." If experience rates are constant regardless of age, it can be explained by an assumption that there are two type persons; one of them is sensitive and repeats paranormal experiences, and the other is not sensitive. Therefore, an existence of a psychological inhibit bias is needed to explain the decrease of experience rates according age.

One possible explanation for this psychological bias is considered that cultural characteristics differed by age

group in 1990s. The 50s-age in 1990y were educated at primary, junior, and high schools in 1950s to 1960s. In these eras, in Japan, many Japanese experienced a drastic change in its constitution, with the average height of children increasing year by year due to the westernization of lifestyles, and also, they were influenced by leftist ideology, such as the 1960 Security Treaty struggle. It is not easy to determine which factors specifically acted as a psychological bias against paranormal experiences, but it is considered as possible to obtain some clues by checking the response trends of long-term questionnaire surveys, such as the Nationwide Survey of Japanese National Character¹¹⁾ conducted by the Institute of Statistical Mathematics. For example, the survey in 1958, 2008, and 2013 had a question “Do you believe world-after-death?” Figure 1 shows results of 1958 and 2008 surveys by age. Forties in 2008 (they correspond to 20s in 1990) answered Yes: 41% and No: 28%. However, 20s in 1958 (they correspond to 50s in 1990) answered Yes: 13% and No: 67%, and it suggests a possibility that psychological biases were caused by social situation at that time.

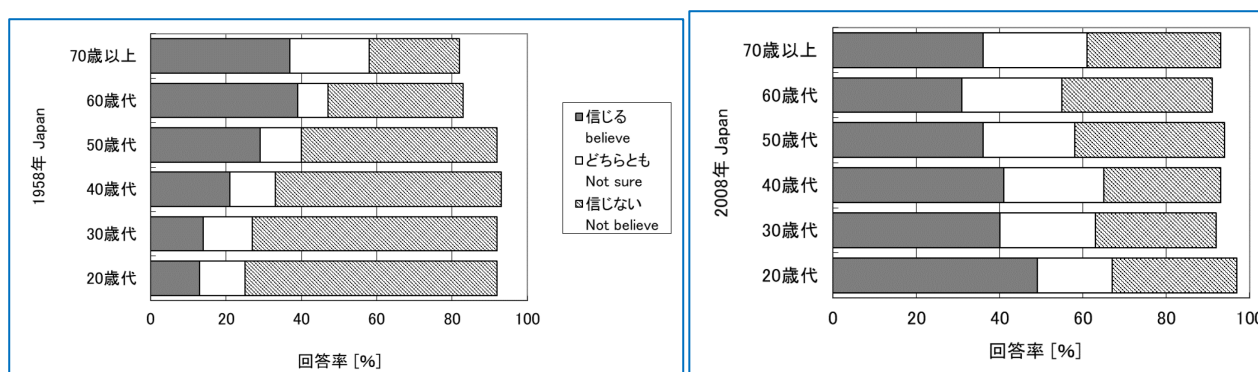


Figure 1 Do you believe world-after-death?

In McClennon's survey, the response tendencies of Japanese and U.S. university students were similar, while the response tendencies of Chinese university students were different from those of the U.S. and Japan. Even if the paranormal experience is a common phenomenon inherent to the human organism, it is considered that its manifestation is affected by geographical and physical conditions as well as by social circumstances, so it is necessary to clarify which kinds of experiences are more susceptible to which environmental factors. For example, Persinger et al.¹⁰⁻¹³⁾ pointed out that spontaneous paranormal experiences are related to diurnal disturbances in the geomagnetic field, and that telepathy is more likely to occur on days with low geomagnetic field disturbances, while precognition and contact with the dead are more likely to occur on days with high geomagnetic field disturbances. In the laboratory level ESP studies, the effects of geomagnetism have been evaluated inconsistently, with both positive and negative results. However, since the beginning of the 21st century, new discoveries have been made about the relationship between organisms and geomagnetism, such as that the magnetic vision of European robins is disturbed by electromagnetic noise emitted by home appliances in urban environments¹⁴⁾, that cows and deer can sense geomagnetism¹⁵⁾, and that humans also have magnetite-type magnetic sensors¹⁶⁾. In addition, archaeological geomagnetism research has estimated the magnetic latitude (latitude based on the axis of the geomagnetic field) of Kyoto over the past 2,000 years, and has revealed that the axis of the geomagnetic field was tilted toward Japan around the year 1200, contrary to the present¹⁷⁾. During the Heian [794-1192] and Kamakura [1192-1333] periods, Japan's geomagnetic field was so strong that auroras were often visible¹⁸⁾. Considering the historic fact that the belief in grudge and ghosts was prominent in the Heian period, geomagnetism should be considered as one of the environmental factors relating paranormal experiences. Moreover, in the 2010s, with the spread of the Internet and information devices such as smartphones, information about paranormal experiences is readily available, so it is possible that people are more likely to accept the fact that they have experienced them than they were in 1990. It is necessary to confirm how such social changes affect or do not affect paranormal experiences.

2. Survey on Paranormal experiences in 2010s and Comparable Past Data

In the 2010s, more than 20 years after the survey by Becker, Hagio, and McClennon, the authors conducted a similar survey of university students (in Japan and Slovakia) and adults (in Japan). The results were compared with data from around 1990 to examine the effects of changing times on paranormal experiences, and a multi-country comparison to examine regional differences.

Table 1 shows the questionnaire items used in this survey. This survey does not include questions on

psychokinesis (PK), but it does include three types of ESP: presentiment (precognition), telepathy, and clairvoyance.

Table 1 Anomalous Experience Items

Item-1 (Déjà vu): Although this is the first time to visit a place, have you ever felt that you had already visited it before?	Yes / No
Item-2 (Sleep paralysis): Have you ever experienced sleep paralysis?	Yes / No
Item-3 (Presentiment): Although it is impossible, have you ever felt future things?	Yes / No
Item-4 (Telepathy): Have you ever felt what is on the mind of other persons at a distant place from you?	Yes / No
Item-5 (Clairvoyance): Have you ever recognized an object although it was hidden from view?	Yes / No
Item-6 (Out-of-body experience: OBE): Have you ever experienced an event that your consciousness left your body?	Yes / No
Item-7 (6th Sense Belief): Do you believe that the Sixth Sense exists?	Yes / No
Item-8 (Signs of Ghost): Have you ever felt signs of a ghost or seen its appearance?	Yes / No
Item-9 (Other experiences): Please write your experiences if you have had paranormal or rare experiences.	

* 4-point scale items were used in the previous surveys, but in the present study, 2-point scale items were used.

Surveyed Groups:

Group A: Students in 2010s (Japan)

Survey was conducted May-June during 2013-2019 at Atomi University, Meiji University, and Wako University. In order to compare data in 1990, data of 18-25-ages were used and data of foreign students were omitted. Available data were 1527 (571 males, 956 females).

Group B: Adults in 2019 (Japan)

Online survey using the Yahoo! Crowdsourcing system. Ten T-points were given to each respondent, but any T-points were not given if they did not answer for the last checking question. Survey was done during 14:00-16:55 on July 6, 2019. Available data were 500 (331 males, 169 females) and the approximate average age was 43.7y.

Group C: Students in 2019 (Slovakia)

Students of University of Žilina. Available data were 443 (300 males, 143 females). Blašková, one of authors, translated Japanese questionnaire sheets to Slovak, and conducted.

Comparing Groups:

Since this survey is based on the questionnaire used in McClenon's comparative anthropological study, the authors used his data of university students in the U.S. and China, and Japanese data based on his questionnaire survey. The data of Japanese university students around 1990 were aggregated into group E so that the sample size

of each group would be more than 200.

Group D: Medical Staffs in 1991 (Japan)⁹⁾

5,183 hospital workers, including doctors, nurses, pharmacists, and medical clerks (average age 37.3 years). In 197 facilities in 28 prefectures, 622 were in internal medicine, 375 in surgery, 1092 in general hospitals, 3094 in mental hospitals, and also 1200 male, 3869 female, and 114 unknown. By occupation, there were 428 doctors, 3106 nurses, pharmacists, laboratory technicians, psychologists, and clerks, 280 ward wives, and 1235 others.

Group E: Students in 1989-1990 (Japan)⁵⁻⁷⁾

Available data were 684 (132 students of Tsukuba University and 552 students in Kagoshima Economics University: presently the Kagoshima International University).

Group F: Students in 1986 (China)¹⁾

Data of 3 universities in Xi'an of China. Available data were 314.

Group G: Students in 1987 (USA)¹⁾

University of Maryland. Available data were 214. More than three quarters of the students are white.

Group H: Students in 1990 (USA)¹⁾

University of North Carolina, Greensboro (UNCG). Available data were 532. More than three quarters of the students are white. Because UNCG had been a women university in past, 67% of samples were females.

Group I: Students in 1988 (USA)¹⁾

Elizabeth City State University (ECSU). Available data were 391. It is located in north-east of North Carolina. Many students are black.

3. Trust for Other Persons

In addition to this survey, three questions on trust in others were extracted from the Nationwide Survey of Japanese National Character and used in this study (Table 2). At the beginning of the present study, the authors assumed that trust for others might be related to belief in the sixth sense and telepathic experiences, but there seemed to be no direct relationship. For this reason, the questions on trust for others were used as a simple indicator to determine whether the surveyed group was homogeneous with the average Japanese population in the same age group. Considering the fact that the target group and the age group of the National Character Survey were not the same and the difference in the survey method, if the difference between the optimistic response rate of the target group and that of the National Character Survey was within ± 10 points (within a range of 20 points), the target group was considered to be basically equal to the Japanese population of the same age group.

Table 2 Trust Items

Question	Answer
Item-1: Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	<ul style="list-style-type: none"> • Can be trusted. • Can't be too careful.
Item-2: Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?	<ul style="list-style-type: none"> • Try to be fair. • Take advantage.

Item-3: Would you say that most of the time, people try to be helpful, or that they are mostly just looking out for themselves?	<ul style="list-style-type: none"> • Try to be helpful. • Look out for themselves.
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*Table 1 was treated as an optimistic response and the lower item was treated as a pessimistic response.

4. Principals for Analyses

In this report, analysis and discussion were conducted based on the following policy. 4-1.

- 4-1. In order to compare with the previous data, the data of the authors' survey was aggregated as having ESP experience when there was experience in either clairvoyance, premonition, or telepathy.
- 4-2. In the authors' early studies, the presence or absence of a difference between the groups was examined by a significance test of the population ratio, but in the present report, it was examined by the magnitude of the point difference in the response rate. Since the groups surveyed were not necessarily randomly selected, the authors considered them to be different if the difference in response rate between groups exceeded 20 points, and basically considered them to be homogeneous otherwise.
 In addition, because there was little evidence to suggest that the surveyed groups examined were appropriate representatives of their age groups, the authors considered differences in response rates of 20 points or less between groups to be comparable.
- 4-3. The authors investigated whether the rates of experiencing déjà vu and sleep paralysis decrease with age among Japanese adults in 2019.
- 4-4. The authors used the Nationwide Survey of Japanese National Character as a cue to examine factors that may be related to the psychological bias of paranormal experiences in the 50s in 1991. Since the Nationwide Survey is conducted every five years, data from 1993 and 2013 were used for comparison. The authors extracted 64 items that were common to both 1993 and 2013 from 147 items excluding the basic items (26 items), and compared the response rates of people in their 50s in the 1993 survey with those of people in their 20s in 1993 and 20s and 40s in 2013. If the response rate in their 50s in the 1993 survey was farther apart $\pm 1.96\sigma$ and ± 10 points from the average of the later 3 groups, it was considered different; otherwise, it was considered the same.
- 4-5. Data of students were compared among Japanese, Slovakia, USA, and China.
- 4-6. There is a possibility that some tendencies are detected at places where geomagnetic total force F is large or where located in high latitude zone if spontaneous paranormal experiences are related to disturbance of geomagnetism. The authors analyzed relationships between the paranormal experience and geomagnetic total force F and latitude. In addition, as a preliminary analysis, assuming that the electromagnetic noise level in the urban environment can be expressed by power supply voltage, the correlation between experiences and power supply voltage were examined.
- 4-7. Results of the European Human Value Survey were re-analyzed in the same way of 4-6.

5. Results and Discussions

5-1. Homogeneity of the surveyed groups

Table 3 shows results of trust for other persons. The difference of the optimistic response rate was within ± 10 points between the Nationwide Survey and groups A & B. Both groups A and B were considered to be homogenic to the average Japanese in 20s. Otherwise, group C was not considered as homogenic because the opposite rate of the 2nd question was 16.7 point larger than one of the average Japanese in 20s. Since trust in others is considered to be important in university education, a detailed comparison between Japan and Slovakia was conducted in a separate report²⁴⁾.

Table 3 Opposite Rate of Trust for Other Persons

Opposite response	Authors' survey	Reference Data
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					(Nationwide Survey of Japanese National Character, 2013)	
		Group A Japan Students	Group B Japan Adults	Group C Slovakia Students	20s	40s
Q1	• Can be trusted.	40.6%	39.0%	33.0%	36%	37%
Q2	• Try to be fair.	64.3%	57.2%	81.7%	65%	65%
Q3	• Try to be helpful.	39.4%	37.0%	34.5%	43%	47%

5-2. Summary by Group

Table 4 shows summary by group in the authors' survey and comparing previous surveys.

Table 4 Paranormal Experiences and Belief on Sixth-sense

Group	Authors' survey			Comparing previous surveys					
	A Japan Students, 2013-2019 n = 1527	B Japan Adults 2019 n = 500	C Slovakia Students 2019 n = 443	D Japan Medical Staffs 1991 n = 5183	E Japan Students 1989-1990 n = 684	F China Students 1986 n=314	G USA Students 1987 n=214	H USA Students 1990 n=532	I USA Students 1988 n=391
Déjà vu	72.8%	64.4%	87.8%	67.0%	52.9%	64.0%	89.0%	86.0%	80.0%
Sleep paralysis	34.9%	50.4%	41.1%	43.0%	33.8%	58.0%	37.0%	32.0%	50.0%
ESP*	38.1% presentiment telepathy clairvoyance	33.5% 36.4% 27.4% 10.9% 7.4%	81.9% 73.1% 28.7% 15.2% 12.8%	**34.0%	24.4%	71.0%	44.0%	42.0%	35.0%
OBE	10.6%	18.2%	26.4%	12.0%	6.1%	55.0%	27.0%	18.0%	18.0%
Sings of ghosts	17.4%	18.0%	30.5%	16.0%	17.1%	40.0%	25.0%	20.0%	25.0%
Sixth-sense	56.1%	71.6%	68.8%	54.0%	71.3%	76.0%	66.0%	60.0%	68.0%

* In order to compare with the previous data, the data of the authors' survey is aggregated as having ESP experience when there is experience in either clairvoyance, presentiment, or telepathy.

** Item "Inspiration" in Kohri's survey is deal as ESP.

5-3. Japanese Tendency (Groups A, B, D, and E)

Figure 2 shows results of Japanese groups A, B, D, and E.

Even though there were differences in the time period, survey groups, and survey methods, the affirmative response rates for each item were distributed within 20 points, and there were no major differences by time period or occupation. Figure 2 can be interpreted as showing the general tendency of Japanese.

Looking at the details, the rate of experiencing the signs of the ghost concentrated in the range from 16% to 18%, and the range width was approximate 1/10 (2 points) of the other items. In addition, the results showed that while students in the 1990s and 2010s were almost the same in "Sleep paralysis", "OBE", and "Signs of the ghosts", there was a difference of more than 10 points in the areas of "Déjà vu", "ESP", and "Sixth-sense belief". It suggests that "Déjà vu", "ESP", and "Sixth-sense belief" are more susceptible to changes in society.

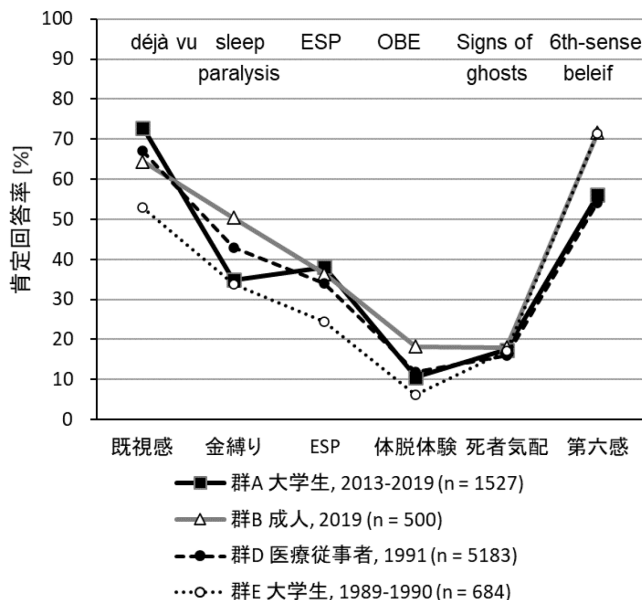


Figure 2 Japanese Tendency

5-4. Age and Experience Rates of Déjà vu & Sleep Paralysis

Table 5 shows the details of group B (Japanese adults) by age. Ages from 30s to 50s, which populations were larger than 100 persons, did not have a tendency to decrease experience rates of déjà vu nor sleep paralysis according to age. As same, the other experiences did not have decreasing tendencies and the range of experience rates was within 3-8 points. Their rates are considered as stable relatively. Comparing medical staffs in 1991 who showed a decreasing tendency according to age, adults in 2019 were more homogenic.

Since data of group B were obtained through an online survey, the results can be interpreted to show a tendency who are well adapted to the modern information society. They have been blessed with opportunities to come into contact with a variety of information and opinions, including paranormal experiences, and it is assumed that the difference in the breadth of knowledge by age is smaller than that of the generation before the information society. For this reason, age homogenization of the inhibition bias toward paranormal experiences is likely to occur.

Table 5 Paranormal Experiences and Sixth-sense Belief in Japanese Adults (2019)

Age	n	Déjà vu	Sleep paralysis	ESP	details			OBE	Signs of ghosts	Sixth-sense
					Presentiment	Telepathy	Clairvoyance			
Under 20	4	100.0%	0.0%	75.0%	50.0%	25.0%	50.0%	0.0%	75.0%	100.0%
20s	49	51.0%	36.7%	40.8%	26.5%	16.3%	20.4%	20.4%	22.4%	55.1%
30s	103	59.2%	48.5%	33.0%	24.3%	12.6%	16.5%	12.6%	19.4%	73.8%
40s	198	67.7%	54.5%	33.3%	25.8%	13.1%	9.6%	19.7%	15.7%	71.2%
50s	110	68.2%	50.9%	40.9%	31.8%	20.0%	10.9%	20.9%	20.9%	71.8%
60s	28	71.4%	60.7%	39.3%	28.6%	17.9%	10.7%	21.4%	7.1%	96.4%
70s	7	42.9%	42.9%	42.9%	42.9%	14.3%	14.3%	0.0%	0.0%	57.1%
Over 80	1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

5-4. Difference between 50s in year 1993 and other generations

Among 64 items of the Nationwide Survey of Japanese National Character, 16 items of 50s in 1993 survey were more than $\pm 1.96\sigma$ and ± 10 points away from the three-group average of 20s in 1993 and 20s and 40s in 2013

(Tables 6 & 7).

Categorizing these 16 items (Table 6), the authors tried to interpret specific characteristic points of 50s in 1993;

- (1) They focus on preparing for the future and elections more than other generations.
- (2) They value ease of work over personal satisfaction, are mentally stable, are deeply religious, and do not like to see major changes in their daily lives.

Point (1) suggests that the target generation experienced the 1960s period when was a time of rapid economic growth (economic growth rate averaged over 10% per year) and when Japanese experienced rapid material improvements in their lives, rising prices, and pollution. Point (2) suggests their preferences for more practicality and mental stability. Paranormal experiences for them are not practical and not easy to explain, then cause anxiety possibly. If these tendencies are assumed to as a reason of inhibition for recognition, memory, and reaction for paranormal experiences, the decreasing tendency of déjà vu, sleep paralysis, and phantom touch in 50s of group D can be explained. However, there is no way to examine it at present day, and there is a possibility that some important items exist among items which were not surveyed in 1993. It is considered too early to propose any hypotheses. However, it suggests the need to focus on broad trends in thinking if examining differences in experience rates between cultures and generations in the future.

Table 6 Difference between 50s in 1993 and other generations

Category	Different 16 items	Answer by 50s in 1993	Average of 3 groups
Life conditions are not satisfied	#2.13 To prepare the future, or to enjoy now	73% answered "to prepare the future"	62%
	#4.5 Do you teach your children "Money is important"	47 % answered "teach money is important"	20%
	#9.17 Global environment	75 % answered "global environment is more important than convenience in life"	87%
General Interest in social situation	#7.4 Happiness of Japan and individual	37 % chose "individual happiness will come through social improvement of Japan".	22%
	#8.6 Interest in the election	49% chose "I must go to election"	22%
Practical feeling is important in work	#5.6b Ideal company if you are employed	69% answered "Feeling similar to family"	46%
	#5.6h who has well-skills in work, or who is friendly if in work.	70% answered "friendly person"	84%
	#7.24 The most important condition when you are employed	32% chose "job which I feel achievement"	43%
Metal stability	#2.80c Illness: frustrating	68% answered "I never feel frustration"	41%
	#9.6 Comparison Japanese with Western persons	52 % answered "Japanese is more excellent"	34%
Religious mind	#3.1 Do you believe religions?	34% answered "believe"	17%
	#3.2b Is important religious mind?	79% answered "important"	56%
	#4.11 Do you respect your ancestors?	76% answered "respect"	49%
Robust is desirable than not stable	#5.24 Do you change your company?	32% answered "to change company is better"	63%
	#9.14 Marriage of your child if he/she want to marry a foreigner	31% agree their child's marriage with a foreigner	58%
Other	#6.5 Difference of abilities between men and women	60% answered "there is a difference of abilities between men and women"	43%

Table 7 48 items which were considered as homogenic among generations

#2.1 Do you follow conventions?	#2.11 Do you want free-life or life for the others?	#5.1d The most important moral	#7.30a Forecasting life level change for 10 years
#2.2b Logic or ambience	#2.12 For other persons or for yourself	#5.6 Section chief who cares his staffs	#7.35 Is it important to protect the environment?
#2.3c Are you satisfied your family?	#2.12b Other persons try to use you	#5.23 Ability or previous contribution	#7.36 Are scientific discoveries and applications useful in our lives?
#2.3d Are you satisfied social situation?	#2.12c Do you trust other persons?	#6.2 Rebirth about man or woman	#7.40 Is society fair?
#2.3i Are you satisfied your job and company?	#2.80a Illness: headaches	#6.2e Male child or female child	#8.1b Outsourcing to politicians?
#2.3j Are you satisfied your holiday?	#2.80e Illness: insomnia	#7.1 Do you think humanity will decrease in future?	#8.9 How to express social dissatisfaction
#2.3k Are you satisfied your health?	#4.4 A teacher did bad	#7.2 Do you think spiritual richness will decrease in future?	#9.12 Japan's level of science and technology
#2.3l Are you satisfied your life?	#4.10 Adopting someone else's child	#7.4b The prosperity of the nation and the lives of its people	#9.12b Japan's arts
#2.4 Life style	#5.1 When you hear that your benefactor is near death.	#7.19 Talent or luck?	#9.12c Japan's economic power
#2.5 Relationship between nature and human	#5.1b When you hear that your parent is near death.	#7.24b 2nd important condition if you are employed	#9.12d Standard level of life in Japan
#2.7 The most important thing	#5.1c1 Examination for employment of your relative	#7.25 Money or job	#9.12e Japan's spiritual richness
#2.8 Do you want to work for whole your life?	#5.1c2 Examination for employment of a child of your benefactor	#7.29 Easiness of your life	#9.16 International contribution

5-5. International Comparison of Students

Figure 3 shows results of university students in Japan, Slovakia, China, and USA (groups A, C, E-I).

Students of Japan and USA had a similar tendency: déjà vu is high (52.9-89.0%); sleep paralysis and ESP are moderate (34.9-50.0%); OBE and signs of ghosts are low (6.1-50.0%), and sixth-sense believe is 56.1-68.0. The width of the data range of USA was smaller than 10 points, and the smallest width was the signs of ghosts.

Students of Slovakia (group C) were similar to Japan and USA, except ESP. ESP experience rate of Slovakia was 81.9% (30 points larger than Japan and USA), especially, presentiment was approximate 40% larger than Japanese students (Table 4). And, clairvoyance was more frequently than telepathy. Since Slovak university students tended to respond differently to the question of trust for others than Japanese university students (group A), it is presumed that their cultural tendencies differ from those of Japanese university students in various aspects that were not measured. Therefore, it is not surprising that there is a slight difference in the experience rate, but for such a remarkable difference in ESP experience (especially in presentiment), the influence of stronger factors beyond "slight differences" is presumed. In discussion on the "strong factors," it is considered to be useful to compare the results with those of students in Xi'an, China in 1986 (group F). Group F was more than 20 points higher than Japanese and USA university students in ESP and OBE, and 8 to 10 points higher in sleep paralysis and the signs of the ghosts. It is possible to assume some common factors that increase ESP experiences in Slovakia in 2019 and in China in 1986, but these factors are not influenced by differences in social conditions between democratic and communist countries, and between the information society and earlier. However, these factors should be less affected by the differences in social conditions between democratic and communist countries, and between the information age and the pre-information age, and should have characteristics that differ from those of Japan and the United States. Although it would be easier to discuss candidate factors if current data for China and previous data for Slovakia were available, this paper attempts to discuss candidate factors based on the present data. In the next section, the authors will focus on geomagnetism as the largest scale candidate environmental factor.

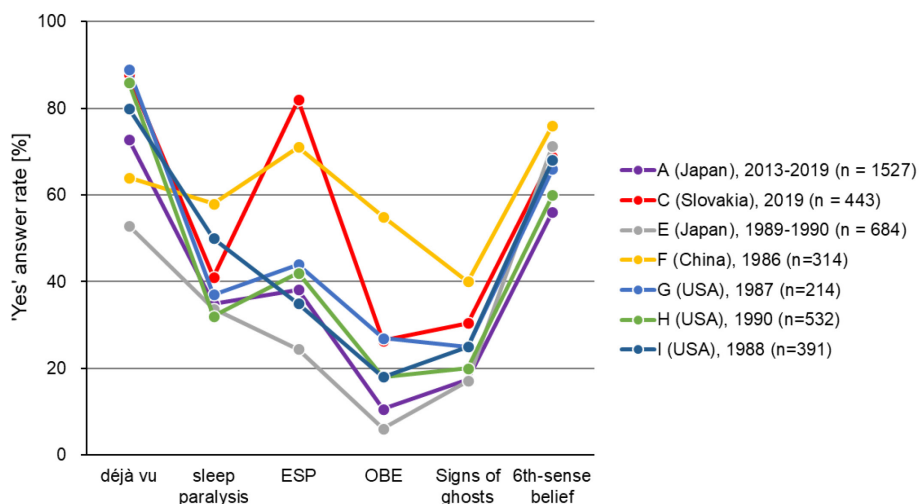


Figure 3 Paranormal experiences and 6th-sense belief of students

5-6. Relationship with Geomagnetism and Urban Electromagnetic Noise

In principle, the geomagnetic field was calculated at the location of the university building where the survey was conducted. But the Izumi campus of the Meiji University was defined as the representative point of group A and the Kagoshima Economics University (presently the Kagoshima International University) was defined as ones of group E, because the surveys of groups A & E were conducted at plural universities. For the group F, Xi'an City in China was chosen as the representative point. Google Earth was used to determine the latitude, longitude, and height above sea level, and the total magnetic force F was calculated by a model magnetic field calculation²⁶⁾ using IGRF-13²⁵⁾ (Table 8).

Table 8 Model Magnetic Field Calculation

Group	Place	Year	Latitude and Longitude	Height [m]	IGRF-13
A	Meiji University (Izumi campus)	2019	N 35°40' E 139°39'	39	F : 46667.3 nT
C	University of Žilina	2019	N 49°12' E 18°45'	392	F : 49236.6 nT
E	Kagoshima Economics University	1990	N 31°29' E 130°30'	53	F : 46326.5 nT
F	Xi'an City	1990	N 34°16' E 108°57'	405	F : 51794.5 nT
G	University of Maryland	1990	N 38°59' W 76°56'	37	F : 54552.1 nT
H	Elizabeth City State University	1990	N 36°1' W 76°13'	2	F : 52901.5 nT
I	University of North Carolina, Greensboro	1990	N 36°4' W 79°48'	249	F : 53391.5 nT

Results, there was no significant correlation between F and paranormal experiences although the correlation coefficient was the largest for déjà vu at $r = 0.62$ ($p = 0.141$, two-tails, $n = 7$). Also, there was no significant correlation between north latitude and paranormal experiences although the correlation coefficients were $r = 0.69$ ($p = 0.086$, two-tails, $n = 7$) for déjà vu and $r = 0.72$ ($p = 0.070$, two-tails, $n = 7$) for ESP experience. Both total magnetism and latitude are static variables, and it is possible that they were not sufficient as indirect indicators of

the magnitude of geomagnetic disturbance. Moreover, since the places analyzed in the present study were only in the mid-latitude zone between 34° and 49°N, it will be necessary to add data of the low and high latitude zones to the further study.

When analyzing the relationship with geomagnetism, it would be ideal to also discuss the effects of urban environmental electromagnetic noise levels. As an attempt, the authors assumed that the electromagnetic noise level in the urban environment can be expressed by the power supply voltage of a common household, and additionally analyzed the correlation with the paranormal experiences. The power supply voltage in the surveyed countries is 100V in Japan, 120V in the USA, 220V in China, and 230V in Slovakia. Calculating correlation coefficients with paranormal experiences, there was a positive and significant correlation between the ESP experience rate and the power supply voltage ($r = 0.97, p = 0.0004$, two-tails, $n = 7$) (Figure 4). There was also a positive significant correlation between the signs of ghosts and the power supply voltage ($r = 0.88, p = 0.009$, two-tails, $n = 7$), but since the maximum point difference in the signs of ghosts was 22.9 points, the effect of the power supply voltage, if related, was considered weak.

For the details of ESP experiences in Slovakia, presentiment was nearly twice as high (73.1%) as telepathy (28.7%) and clairvoyance (43.1%) (Table 4), and accounted for the majority of ESP experiences, so the effect of power supply voltage is likely to appear in presentiment. This result is also consistent with the fact that precognition and signs of the dead among the spontaneous paranormal experiences tend to occur on days with large geomagnetic fluctuations. The power supply voltage is one of the candidate environmental factors to explain the high ESP experience rate (presentiment experience rate) in Slovakia, because it is not much affected by the difference in social conditions and meets the condition of being different from Japan and USA.

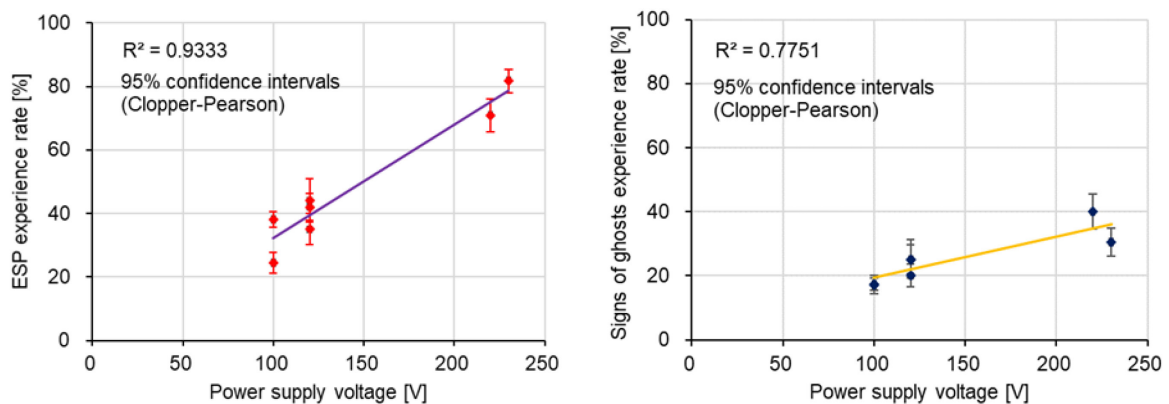


Figure 4 Correlation of ESP or signs of ghosts with power supply voltage for students in Japan, USA, China, and Slovakia
 Error bars are 95% confidence intervals (Clopper-Pearson).

5-7. European Human Values Survey and Total Magnetic Force, North Latitude, & Power Supply Voltage

For data of the Human Value Survey, similar analyses are possible if the representative place is defined as location of the capital city of each country.

Table 9 shows data of the Human Value Survey by country²⁾ and the calculated total magnetic force in 1990. The authors re-analyzed data of 15 countries where are located from 37° to 64° of latitude north (middle to high latitude zones). Power supply voltages were obtained from descriptions on the site of “Tikyuu no Arukikata”²⁷⁾, and low voltages were used for calculation.

Table 9 Total magnetic force F (1990) and data of the European Human Values Survey (Adults)

Country	<i>n</i>	Latitude north of Capital	Longitude of Capital	Height [m]	<i>F</i> [nT]	Power supply voltage [V]	Telepathy [%]	Clairvoyance [%]	Contact with dead [%]
France	1200	48°51'	E 2°21'	34	47350.1	220	34	24	24
Italy	1348	41°54'	E 12°29'	31	45637.5	220	41	39	34
Spain	2303	40°25'	W 3°42'	654	44233.4	230	21	14	16
Belgium	1145	50°53'	E 4°17'	55	47993.7	220	21	14	18
Great Britain	1231	51°30'	E 0°8'	22	48093.8	220	36	14	26
West Germany	1305	52°31'	E 13°24'	38	48789.9	230	39	17	28
Holland	1221	52°22'	E 4°54'	-1	48417.7	230	29	12	12
Ireland	1217	53°21'	W 6°16'	-1	48659.3	220	19	11	16
Denmark	1182	55°41'	E 12°34'	12	49503.6	220	15	12	10
Finland	1003	60°10'	E 24°56'	13	51196.2	220	40	15	14
Iceland	927	64°9'	W 21°56'	7	52139.1	220	34	7	41
Norway	1426	59°55'	E 10°45'	5	50371.5	230	17	7	9
Sweden	954	59°20'	E 18°4'	12	50569.6	220	24	7	14
South Korea	942	37°34'	E 126°59'	30	50675.9	220	48	25	23
USA	2325	38°54'	W 77°2'	26	54525.8	120	54	25	30
Whole EU							34	21	25

The correlation between clairvoyance and northern latitude was $r = -0.74$ ($p = 0.002$, two-tails, $n = 15$), a statistically significant negative correlation (Fig. 5). The correlation coefficient between clairvoyance and total magnetic force was not significant ($r = -0.22$, $p = 0.434$, two-tails, $n = 15$). While the correlation coefficients of telepathy and the contact with the dead were $-0.33 \leq r \leq 0.12$, and there was no correlation with either total magnetism or northern latitude.

In relationship to power supply voltage, telepathy was moderately negatively correlated at $r = -0.55$ ($p = 0.041$, two-tails, $n = 15$), while both clairvoyance and the contact with the dead were not correlated at $r = -0.31$ ($p = 0.28$, two-tails, $n = 15$).

Since the power supply voltage was 220V-230V in many countries and 120V data was only USA, the negative correlation seen in Fig. 5 is the result of the removal of the difference in urban environmental electromagnetic noise level. The re-analyzed data of the European Human Values Survey shows that the clairvoyant experience is easily suppressed in high latitudes where the influence of geomagnetic fluctuation is large, and that it is difficult to detect the effect of latitude unless the latitude range is sufficiently wide.

Telepathy was suggested as more easily influenced by the urban environmental electromagnetic noise level than by latitude, but this is due to the influence of the USA data, which has only one point, and needs to be examined with additional data.

For contact with the dead, there was not any effect of either latitude or urban ambient electromagnetic noise level.

From the above analyses, it is considered that the responsiveness to electromagnetic phenomena differs depending on the type of paranormal experiences. The relationship between electromagnetic phenomena and paranormal experiences should be studied from various perspectives in the future, as it may provide clues to the differences in the mechanisms of paranormal experiences.

The European Human Values Survey was conducted on adults, and the survey method and questions were different from the authors' survey. Therefore, it was difficult to make a direct comparison. In addition, there is a complex issue on the supply voltage; the frequency of power supply is different: 50 Hz in eastern Japan and 60 Hz in western Japan, and three-phase 200V is also becoming popular gradually in recent Japan. Also, in the EU, the power supply voltage is switching to single-phase 230V and three-phase 400V. The accurate evaluation of the electromagnetic noise level in urban environments is a future task.

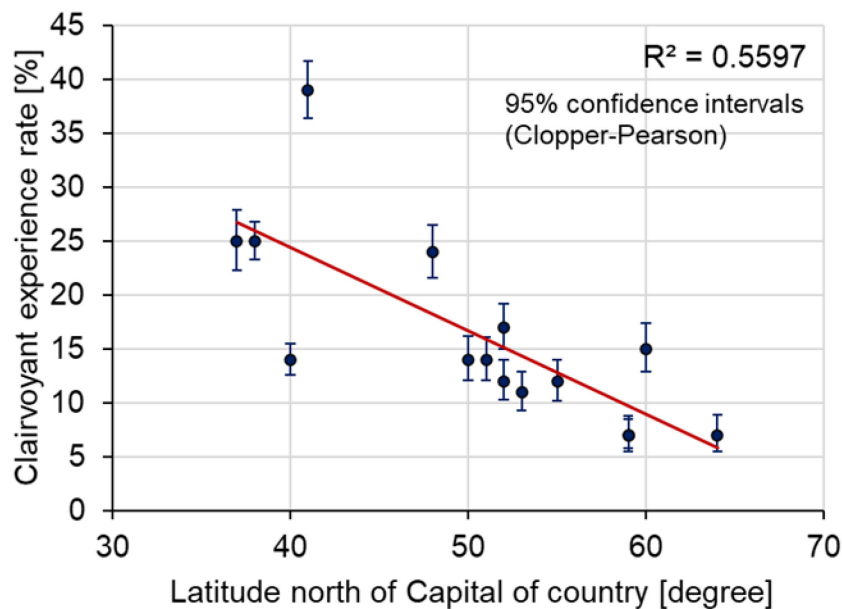


Figure 5 Relationship between latitude north and clairvoyance in European Human Values Survey (adults)
Error bars are 95% confidence intervals (Clopper-Pearson)

6. Conclusion

There was no large difference in the rate of paranormal experiences among Japanese people depending on the period of the survey, the survey target, or the survey method. The fact that the experience rate was relatively stable suggests that there are two types of people: those who are more sensitive to paranormal experiences and those who are less sensitive to paranormal experiences.

University students in Japan and USA showed similar trends, with high levels of déjà vu (52.9-89.0%), moderate levels of sleep paralysis and ESP experiences (34.9-50.0%), low levels of OBE and the signs of ghosts (6.1-25.0%), and belief in the sixth sense (56.1-68.0%). Slovak university students were similar to Japanese and USA students, but their ESP experience was 81.9%, more than 30 points higher than Japanese and USA students, and especially the presentiment was almost 40 points higher than Japanese students. A possibility was suggested that power supply voltage as a strong environmental factor caused this difference. Using the same method, the authors re-analyzed the data from the European Human Values Survey (adults) conducted in 1981-1984, and found that latitude and the level of electromagnetic noise in the urban environment affected clairvoyance and telepathy, and that these effects differed depending on the type of experience. It was considered that the responsiveness to electromagnetic phenomena differed depending on the type of paranormal experiences. The relationship between electromagnetic phenomena and paranormal experiences needs to be studied more from various perspectives in the future.

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