

Framing Taxes as Losses: A Phenomenological Study of Mental Accounting and Compliance Behaviour in Indonesia

Muhammad Abdil Aziz

Sekolah Tinggi Ilmu Ekonomi Indonesia Surabaya, Indonesia

e-mail: muhabdilaziz@gmail.com

ORCID: [0009-0000-9323-7346](https://orcid.org/0009-0000-9323-7346)

Fidiana Fidiana

Sekolah Tinggi Ilmu Ekonomi Indonesia Surabaya, Indonesia

e-mail: fidiana@stiesia.ac.id

ORCID: [0000-0002-9895-7809](https://orcid.org/0000-0002-9895-7809)

© 2025 Muhammad Abdil Aziz, Fidiana Fidiana

This work is licensed under the Creative Commons Attribution-ShareAlike 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/4.0/>

Quote as: Aziz, A. M., & Fidiana, F. (2025). Framing Taxes as Losses: A Phenomenological Study of Mental Accounting and Compliance Behaviour in Indonesia. *Financial Sciences*, 30(2), 14-22.

DOI: [10.15611/fins.2025.2.02](https://doi.org/10.15611/fins.2025.2.02)

JEL: H26, H30, M41, M48, K34

Abstract

Aim: This study examined how taxpayers perceive and manage their tax liabilities through an accounting mental approach.

Methodology: Employing a phenomenological approach, the authors conducted in-depth interviews with tax consultants and clients experienced in fulfilling tax obligations. Data were analysed through bracketing, categorisation, and thematic development.

Findings: Five themes emerged: tax and corruption as intertwined tensions, consultants as facilitators of legal avoidance, bookkeeping as a strategic tool, low-risk avoidance as a preferred option, and compliance as a subtle psychological struggle. Taxpayers commonly frame taxes as entries in a 'loss account', prompting loss-aversion strategies to minimise liabilities whilst remaining lawful. Consultants act as both technical experts and psychological intermediaries who translate taxpayers' fear of sanctions into avoidance strategies.

Implications: The study extends the 'slippery slope' theory by showing how loss framing shapes compliance in Indonesia, and underlines the dual role of tax consultants, highlighting the need of policy to rebuild trust and reframe taxation as a civic responsibility to encourage voluntary compliance.

Originality/value: By revealing how negative tax framing and distrust interact to shape compliance, the study offers new insights into tax behaviour in contexts where legality, avoidance, and low institutional trust converge.

Keywords: tax compliance, phenomenology, loss aversion, legal avoidance, tax consultants, slippery slope theory

1. Introduction

Tax compliance remains one of Indonesia's most persistent policy challenges. Although the self-assessment system was introduced to encourage voluntary reporting and payment, compliance rates continue to be consistently low. Paradoxically, individuals and businesses are willing to devote substantial resources to religious or charitable contributions, particularly zakat and other forms of donation (Fidiana, 2020).

Zakat – one of the Five Pillars of Islam – is a mandatory form of almsgiving, calculated as a fixed proportion of an individual's wealth and intended to support those in need within the Muslim community. As a faith-based financial obligation deeply embedded in Islamic society, it functions as a structured mechanism for wealth redistribution, yet this institution is still largely unfamiliar and unused within European fiscal systems.

Unlike taxation, which is imposed by the state to finance a broad array of public goods and governmental functions, zakat is a religious duty governed by Islamic law and directed toward specific categories of beneficiaries, such as the poor. Its calculation reflects spiritual principles rather than state budgetary priorities, drawing on fixed percentages of particular types of assets. In many Muslim-majority contexts, zakat is institutionalised and integrated into daily socio-economic life, strengthening community solidarity and a sense of ethical responsibility. As such, zakat represents a distinctive redistributive instrument that is standard in Islamic environments but absent from European welfare and tax frameworks. This contrast suggests that Indonesia's tax compliance issue may not stem from a lack of willingness to contribute, but rather from the way taxation is cognitively framed and socially understood (Fidiana & Retnani, 2018; Indrawan et al., 2024).

Mental accounting theory (Thaler, 1999) provides a behavioural perspective on this issue. Taxpayers often categorise taxes in a 'loss account', which triggers strong aversion and motivates strategies to reduce the perceived burden. In contrast, zakat and donations are framed in positive accounts that generate tangible, social, and spiritual benefits. Consequently, taxes are perceived as coercive obligations, while zakat is seen as cooperative and meaningful. This cognitive framing may explain why compliance is approached reluctantly, often through avoidance strategies rather than voluntary solidarity.

While prior research investigated tax compliance through surveys and experiments, qualitative insights into how taxpayers and consultants experience and interpret taxes remain limited. Studies in Indonesia largely focused on quantitative determinants such as trust, fairness, and enforcement (e.g. Faizal et al., 2017; Fochmann & Wolf, 2015), but these approaches failed to capture the subjective meanings and practical strategies taxpayers employ in navigating their obligations. The actual experiences of professional tax consultants – who play a pivotal role in shaping taxpayer behaviour – are particularly underexplored.

The study addressed this research gap by applying a phenomenological approach to examine how taxpayers and consultants construct, interpret, and manage taxes through the perspective of mental accounting. By focusing on individuals with a long-term involvement in taxation, the study offers new insights into the psychological framing of taxes and the strategies used to manage compliance.

The aim of this article was twofold: first, to deepen theoretical understanding of tax compliance by integrating mental accounting theory into the behavioural tax literature, and second, to provide practical implications for policymakers and practitioners seeking to improve compliance. The findings showed that compliance in Indonesia is less of an act of voluntary cooperation and more a form of pragmatic risk management shaped by distrust, fear of sanctions, and the mediating role of consultants.

2. Literature Review

2.1. Mental Accounting and Tax Behaviour

Mental accounting, introduced by Thaler (1999), explains how individuals cognitively categorise and evaluate financial transactions. Instead of treating money as perfectly fungible, resources are divided into separate 'mental accounts' with distinct rules for spending and evaluation. Within this framework, taxes are frequently placed in a 'loss account', evoking stronger psychological resistance than voluntary contributions such as donations or zakat (Faizal et al., 2017). This cognitive categorisation influences compliance behaviour, as taxpayers attempt to minimize perceived losses, often by adopting avoidance strategies or relying on intermediaries such as consultants (Harahap et al., 2025 Nurhapsari et al., 2024).

Loss aversion plays a particularly critical role in taxation. Fochmann and Wolf (2015) demonstrated that individuals perceive tax obligations as more burdensome compared to equivalent payments framed differently, underlining the asymmetric psychological weight attached to taxation. Such insights illustrate why taxpayers may be reluctant to comply voluntarily and instead seek strategies to reduce the salience of losses.

2.2. Trust, Enforcement, and the Slippery Slope Framework

The 'slippery slope' framework proposed by Kirchler, Hoelzl, and Wahl (2008) highlights the dynamic interaction between trust in authorities and the power of enforcement in shaping compliance. According to this model, high trust encourages voluntary cooperation, whereas strong enforcement fosters enforced compliance. In the Indonesian context, persistent corruption scandals and governance issues erode public trust, leading taxpayers to perceive compliance as coercive rather than cooperative (Hikmah et al., 2021).

Empirical studies further reinforce this view. Faizal et al. (2017) and Hikmah et al. (2021) demonstrated that perceptions of fairness, transparency, and institutional integrity are central to compliance decisions. When trust is low, compliance often becomes motivated primarily by fear of sanctions, perpetuating a cycle in which enforced compliance dominates voluntary cooperation.

2.3. Theory of Planned Behaviour and Taxpayer Intentions

The theory of planned behaviour (TPB) developed by Ajzen (1991) offers another perspective for understanding taxpayer decision-making. TPB posits that attitudes, subjective norms, and perceived behavioural control jointly determine behavioural intentions. Applied to taxation, negative attitudes rooted in distrust of government spending, reliance on consultants as normative reference points, and bookkeeping practices that enhance perceived control, all interact to shape compliance behaviour. Thus taxpayers' intentions cannot be reduced to financial calculations alone but must be understood as socially and cognitively embedded.

2.4. Previous Studies and Research Gap

International research has increasingly recognised the role of mental accounting in shaping tax compliance. Muehlbacher et al. (2015) and Olsen et al. (2019) showed that cognitive framing and social norms interact to influence compliance decisions. In Indonesia, studies by Putri and Setiawan (2018) as well as Fidiana (2020) highlighted the dualism between taxes and zakat, revealing how moral and spiritual obligations compete with fiscal obligations in financial decision-making.

Despite these contributions, much of the Indonesian literature remains quantitative in orientation, relying on surveys to identify correlations between compliance and factors such as trust, fairness, and

enforcement. While useful, such approaches neglect the subjective dimensions of tax behaviour, namely how taxpayers mentally categorise taxes, how consultants mediate compliance strategies, and how these interpretations translate into everyday practices of avoidance, compliance, or resistance. The actual experiences and narratives that reveal the how and why of compliance remain underexplored.

2.5. Contribution of this Study

This study aimed to fill this research gap by employing a phenomenological approach to explore how taxpayers and consultants in Indonesia cognitively construct and manage taxes. Through an analysis of noema (observable acts of compliance, avoidance, and resistance) and noesis (the underlying consciousness shaped by fear, distrust, and moral reasoning), the study provides a nuanced account of compliance behaviour (Moustakas, 1994). By situating mental accounting within the broader behavioural tax literature, the findings contribute in two ways: by advancing theoretical understanding of how compliance is shaped by loss aversion and distrust, as well as by offering practical insights for policymakers on how to reframe taxation in ways that foster cooperation rather than fear.

3. Methodology

3.1. Research Approach

This study employed a qualitative phenomenological approach to examine how taxpayers and consultants cognitively construct and manage tax obligations through mental accounting. Phenomenology was selected as it allows for an in-depth exploration of actual experiences and the subjective meanings that participants attach to taxation – dimensions that cannot be fully captured through surveys or quantitative models (Creswell & Poth, 2018; Moustakas, 1994). By emphasising participants' narrative, this approach enabled the study to uncover both the conscious reasoning and the implicit cognitive processes that shape compliance behaviour.

3.2. Participants

The participants were recruited using purposive sampling to ensure relevance to the research focus (Patton, 2015). The final sample consisted of five respondents representing both professional and client perspectives:

- Three tax consultants, each with more than five years of professional practice and active membership in the Indonesian Tax Consultants Association (Ikatan Konsultan Pajak Indonesia – IKPI). Their portfolios encompassed diverse clients, ranging from small enterprises to large corporations.
- Two business taxpayers, both entrepreneurs with annual turnovers exceeding 4.8 billion Rupiah, who consistently engaged the services of tax consultants for compliance management.

This composition was deliberately chosen to capture the interplay between professional expertise and taxpayer experience, offering a balanced view of how compliance strategies are co-constructed in practice.

3.3. Data Collection

Data were collected through semi-structured, in-depth interviews, conducted either face-to-face or via online platforms depending on participants' availability. Each interview lasted between 45 and 60 minutes and was audio-recorded with informed consent. Ethical protocols were strictly observed – the participants were assured of anonymity and confidentiality, and pseudonyms (initials) were used in all transcripts and reporting. The interview guide was designed to probe key themes while allowing the respondents flexibility to elaborate answers. Core areas of inquiry included:

- How taxes are mentally categorised in relation to other obligations such as zakat or donations.
- The perceived role of consultants in shaping compliance decisions.
- The significance of bookkeeping in managing and minimizing tax burdens.
- Perceptions of government trustworthiness, fairness, and enforcement.

This flexible structure allowed the participants to narrate their experiences in their own terms while ensuring coverage of the study's central concerns.

Specifically, data collection stopped when it was observed that successive interviews yielded no new codes or themes – a point at which thematic redundancy was achieved, aligning with accepted guidelines for determining saturation in qualitative research. The authors also conducted a retrospective review of the interviews to confirm that meaning saturation had been attained, ensuring that the depth and nuance of the phenomenon under study were thoroughly captured.

3.4. Data Analysis

Data analysis followed Moustakas's (1994) phenomenological method, which highlights uncovering the 'essence' of a phenomenon through systematic reduction. The process unfolded in several stages. Firstly, epoché (bracketing): the researcher suspended personal biases to remain attentive to the participants' perspectives. Second, horizontalisation: significant statements were extracted from the transcripts, with equal value assigned at the initial stage. Third, clustering of meanings: the statements were grouped into thematic categories that reflected shared meanings. Fourth, textural and structural descriptions: the analysis reconstructed both what the participants experienced (textural) and how they experienced it (structural). Fifth, composite essence: the findings were synthesised into overarching themes that captured the essential nature of taxpayer-consultant interactions in the tax compliance process.

4. Results

The phenomenological analysis revealed five central themes that illustrate how taxpayers and consultants perceive, categorise, and manage tax obligations through mental accounting. Each theme is presented with supporting quotes and interpretive analysis.

4.1. Development and Corruption: Enemy but Relative

The participants consistently expressed ambivalence toward taxation. While acknowledging taxes as vital for national development, they simultaneously questioned their effectiveness due to recurrent corruption scandals. Taxes were mentally framed as both obligatory and tainted. A consultant noted:

Taxes are important, but when we see so much corruption, we feel betrayed. It's like we are paying for something that will never benefit us directly. (SRR)

A taxpayer similarly explained:

If I pay zakat, I can see directly where it goes. But with taxes, it disappears, and then you read about officials stealing it. (AJI)

This tension exemplifies how taxes are coded as unavoidable 'loss accounts', whereas zakat and donations are framed positively as yielding visible and spiritual returns. This dichotomy influences compliance behaviour, where distrust in government weakens taxpayers' sense of cooperative obligation.

This theme underlines the paradoxical nature of taxpayers' attitudes. Taxes were cognitively categorised as losses, heavily shaped by distrust of state institutions, whereas zakat and donations were framed in positive accounts because they yielded direct, visible, and spiritual returns. This aligns with mental

accounting theory (Thaler, 1999) and resonates with the ‘slippery slope’ framework (Kirchler et al., 2008), which posits that voluntary compliance declines when institutional trust is low. It also extends the theory of planned behaviour (Ajzen, 1991), demonstrating how negative attitudes rooted in corruption perceptions weaken taxpayers’ compliance intentions.

4.2. Consultants as Facilitators of Legal Avoidance

Tax consultants emerged as critical intermediaries who did more than perform technical calculations – they provided reassurance and legitimacy. Consultants reframed taxes as controllable obligations, enabling taxpayers to manage anxiety and uncertainty. As one consultant described:

Our job is not to encourage fraud, but to help clients find the safest and cheapest way within the law. Clients don’t want jail; they just want peace of mind. (TBP)

A taxpayer confirmed this dependency:

Without my consultant, I wouldn’t dare submit my own reports. I’m afraid of mistakes, fines, or being audited. The consultant is like my shield. (AR)

In this way, consultants function as cognitive and emotional ‘buffers’, transforming tax liabilities from uncontrollable losses into manageable, minimised expenses within taxpayers’ mental accounts.

Consultants served as both technical experts and psychological mediators. They restructured taxes into more acceptable forms of expenditure, thereby easing taxpayers’ anxiety. Within the mental accounting approach, consultants reframed losses into controlled, minimised expenses. From a TPB perspective, consultants acted as normative influences, guiding clients toward what was seen as safe and legitimate. This highlights the importance of professional networks in shaping compliance behaviour.

4.3. Bookkeeping as the Key to Successful Legal Avoidance

The participants repeatedly stressed that accurate bookkeeping was fundamental to effective tax planning. Well-maintained records allowed consultants to optimise allowable deductions, apply credits, and reduce liabilities. One senior consultant remarked:

If the bookkeeping is neat, I can create a strategy. But if it’s messy, clients are forced to pay more. Good bookkeeping is their weapon. (DHN)

A taxpayer shared a similar realisation:

My consultant always tells me to keep receipts and invoices. At first, I thought it was troublesome, but later I realised it saves a lot of money. (AJI)

Here, bookkeeping became more than an administrative tool; it was a strategic element of mental accounting, enabling expenditures to be reframed into deductible categories and thus reducing the perceived burden of taxation.

Accurate bookkeeping enabled consultants to deploy legal avoidance strategies effectively, illustrating how financial categorisation operates in practice. Bookkeeping reinforced perceived behavioural control, a central element of TPB, by allowing taxpayers to feel in command of their obligations. However, this reliance also revealed gaps in financial literacy, indicating potential areas for policy interventions to promote independent compliance.

4.4. Legal Avoidance: Cheaper without Jail

The participants overwhelmingly preferred legal avoidance over outright evasion. Fear of sanctions and imprisonment was the central motivator in shaping compliance. As one consultant summarised:

Clients always say: if it's legal, reduce it as much as possible. But don't cross the line. Prison is the last thing they want. (SRR)

This illustrates the balancing act taxpayers perform: reducing tax payments pragmatically while ensuring compliance with the law. Legal avoidance was viewed as the rational equilibrium between financial efficiency and psychological safety.

The dominance of legal avoidance reflects the strong influence of loss aversion (Kahneman & Tversky, 1979). Taxpayers perceived the potential losses of sanctions and imprisonment as outweighing the savings from evasion. Compliance was thus shaped less by moral duty and more by the pragmatic avoidance of risk, aligning with the enforced compliance pathway of the 'slippery slope' framework.

4.5. War without Weapons

The relationship between taxpayers and authorities was described as adversarial and conflictual. Tax audits, inspections, and disputes were framed as confrontational struggles. A consultant expressed this sentiment:

Tax audits feel like war, but we fight with paperwork instead of weapons. (DHN)

Similarly, a taxpayer noted:

It's exhausting, like a cat-and-mouse game. The government always suspects us, and we always feel we must defend ourselves. (AR)

This adversarial framing positioned taxation as an ongoing battle, where compliance was a defensive strategy rather than cooperative participation. Taken together, the five themes reveal that Indonesian taxpayers construct taxes as obligatory losses framed by distrust, fear, and conflict. Consultants and bookkeeping act as cognitive and practical mechanisms to reframe these losses, minimising the burden while maintaining legality. Thus compliance emerges not as voluntary solidarity but as pragmatic risk management within an adversarial state–citizen relationship.

The adversarial framing of taxation disclosed how taxpayers mentally coded interactions with authorities as ongoing battles. Rather than cooperative participation, compliance was experienced as a defence against suspicion and enforcement. This adversarial orientation perpetuates defensive compliance and entrenches distrust, undermining the possibility of building voluntary solidarity.

5. Conclusion and Contributions

This study demonstrates that tax compliance in Indonesia is not merely a matter of legal obligation but a cognitive process structured through mental accounting. Taxes are consistently framed as losses, while zakat and donations are categorised positively. Consultants and bookkeeping serve as mechanisms that reshape compliance into manageable and strategic practices.

Theoretically, this study extends mental accounting theory by showing how taxpayers use professional intermediaries and bookkeeping as tools to reframe losses into controlled expenses. It also integrates TPB and the slippery slope framework, illustrating how attitudes, normative influences, perceived control, and institutional trust interact in shaping compliance.

Therefore, the findings suggest that efforts to improve compliance should go beyond enforcement. Policies that enhance transparency, reduce corruption, and strengthen trust may shift taxpayers' mental framing of taxes from loss accounts to cooperative contributions. Educational programmes on bookkeeping and financial literacy can also empower taxpayers to manage compliance more independently, reducing overreliance on consultants.

References

- Amin, A. (2021). Tax on Zakat on Income Tax: Perceptions of Muslim Taxpayers. *Dinasti International Journal of Economics, Finance & Accounting*, 1(6), 1102-1111. <https://doi.org/10.38035/dijefa.v1i6.746>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Aprilia, I., & Santoso, B. (2020). Persepsi Perbandingan Pemunutan Pajak dan Zakat (Studi Kasus WPOP di KPP Pratama Batam). *Measurement Jurnal Akuntansi*, 14(1), 16-22. <https://doi.org/10.33373/mja.v14i1.2472>
- Direktorat Jenderal Pajak. (2022). Laporan kinerja Direktorat Jenderal Pajak tahun 2021. Kementerian Keuangan Republik Indonesia. <https://www.pajak.go.id>
- Faizal, S. M., Palil, M. R., Maelah, R., & Ramli, R. (2017). Perception on justice, trust and tax compliance behavior in Malaysia. *Kasetsart Journal of Social Sciences*, 38(3), 226-232. <https://doi.org/10.1016/j.kjss.2016.10.003>
- Fidiana, F. (2020). Compliance behaviour from the holistic human nature perspective. *Journal of Islamic Accounting and Business Research*, 11(5), 1145-1158. <https://doi.org/10.1108/JIABR-11-2016-0142>
- Fidiana, F., & Retnani, E. D. (2018). Liberating of Forced Feeling to Pay Tax through ihsan (Virtue). *International Journal of Academic Research in Business and Social Sciences*, 8(7), 911-920. <http://dx.doi.org/10.6007/IJARBS/v8-i7/4499>
- Fochmann, M., & Wolf, N. (2015). Mental accounting in tax compliance: Evidence from a survey experiment. *arqus Discussion Paper*, 186. Arbeitskreis Quantitative Steuerlehre. <https://hdl.handle.net/10419/109953>
- Harahap, P. D. S., Ramashar, W., & Fitriana, N. (2025). The Influence of tax morals, good government governance, and social media on individual taxpayer compliance with trust as moderation. *Jurnal Manajemen Perbankan Keuangan Nitro*, 1(4), 40-59. <https://ojs.nitromks.ac.id/index.php/JMPKN/article/view/739>
- Hikmah, N., Sari, D., & Martani, D. (2021). Trust, fairness, and compliance: Evidence from Indonesian taxpayers. *Jurnal Akuntansi dan Keuangan Indonesia*, 18(1), 1-22.
- Ikatan Konsultan Pajak Indonesia (IKPI). (2023). *Laporan tahunan IKPI*. Jakarta: IKPI
- Indrawan, R., Setiawan, A., & Djajadikerta, H. (2024). Could Trust and Religiosity as Factor of Individual Taxpayer Compliance? A Systematic Literature Review. *Jurnal Ilmiah Edunomika*, 8(2). <https://jurnal.stie-aas.ac.id/index.php/jie/article/view/12788>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291. <https://doi.org/10.2307/1914185>
- Kirchler, E., Hoelzl, E., & Wahl, I. (2008). Enforced versus voluntary tax compliance: The "slippery slope" framework. *Journal of Economic Psychology*, 29(2), 210-225. <https://doi.org/10.1016/j.joep.2007.05.004>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (4th ed.). SAGE Publications
- Moustakas, C. (1994). *Phenomenological research methods*. Sage. <https://doi.org/10.4135/9781412995658>
- Muehlbacher, S., Hartl, B., & Kirchler, E. (2015). Mental Accounting and Tax Compliance: Experimental Evidence for the Effect of Mental Segregation of Tax Due and Revenue on Compliance. *Public Finance Review*, 45(1), <https://doi.org/10.1177/1091142115602063>
- Nurhapsari, R., Rohmania, A. S., & Sholihah, E. (2024). Tax compliance transformation: The role of e-tax system and money ethics through taxpayer behavioral intentions. *E-Jurnal Akuntansi*, 34(12). <https://doi.org/10.24843/EJA.2024.v34.i12.p11>
- Olsen, J., Kasper, M., Kogler, C., Muehlbacher, S., & Kirchler, E. (2019). Mental accounting of income tax and value added tax among self-employed business owners. *Journal of Economic Psychology*, 70, 125-139. <https://doi.org/10.1016/j.joep.2018.12.007>
- Patton, M. Q. (2015). *Qualitative Research and Evaluation Methods* (4th ed). SAGE.
- Prastiwi, D., Endrasti, N. R., & Abdiah, Y. (2024). Trust and Tax Compliance in Indonesia. *Jurnal ASET (Akuntansi Riset)*, 16(1), 65-78. <https://doi.org/10.17509/jaset.v16i1.60788>
- Putri, I. A., & Setiawan, A. (2018). Perbandingan persepsi wajib pajak terhadap pajak dan zakat: Studi pada UMKM di Jawa Timur. *Jurnal Ekonomi dan Bisnis Islam*, 4(2), 155-169.
- Thaler, R. H. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, 12(3), 183-206. [https://doi.org/10.1002/\(SICI\)1099-0771\(199909\)12:3<183::AID-BDM318>3.0.CO;2-F](https://doi.org/10.1002/(SICI)1099-0771(199909)12:3<183::AID-BDM318>3.0.CO;2-F)