

Programme Integrity or Programme Integration? The need for a co-ordinated approach to work with domestic violence offenders.

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Summary

Current practice in criminal justice social work tends to emphasise the value of cognitive behavioural interventions, preferably delivered in structured group work programmes, as being the standard for increasingly effective interventions with offenders. This article acknowledges the value of programmes, but urges caution and the need to pay attention to the integration of such programme work with other interventions, including probation case management and inter-agency communication and co-operation. Specifically, the author reports on the findings of a study of a domestic violence offenders' programme in Scotland, and points to a range of programme integration and case management issues arising. The article concludes by drawing lessons for practice, including implications for maximising probation effectiveness, particularly in terms of more integrated working.

Keywords Probation Practice; Cognitive Behavioural Programmes; Case Management; Domestic Violence; Programme Effectiveness, Integrity, Integration; Drift; Resistance; Desistance; Maintenance

Introduction

The upsurge in enthusiasm for cognitive behavioural programmes within the probation service that developed in the wake of the What Works literature has recently been curbed at least in the UK by a number of cautionary findings from research and practice. As early as 1997 Hedderman and Sugg's (1997) survey of probation service programmes in England and Wales had found that cognitive behavioural techniques were not always well understood by probation staff and that programmes in which they were delivered were inconsistently monitored. Discussing the implementation of Glamorgan's early STOP Programme, Vanstone (2000) cautioned that staff enthusiasm for innovative group programmes could result in marginalisation and lack of attention to practice outside the programme, thereby undermining its overall effectiveness. While the accreditation of UK programmes by the joint Prisons Probation Accreditation Panel aims to overcome such shortcomings, there remains concern among practitioners and researchers alike that pre-occupation with the minutiae of programme detail potentially undermines the significance of good practice outside the programme itself. Although accreditation criteria do emphasise the importance of case management, an increasing body of research comments on the significance of a quality supervisory relationship and how it too contributes to reducing offending and other changes in behaviour (Rex 1999, Trotter 1999, 2000).

Such general concerns about over reliance on programmes are heightened when applied to interventions with sexual or violent offenders, and those who are violent in relationships. A significant finding by Gondolf (2002) in a major study of domestic violence offender programmes

for example suggests that 'programme effectiveness' seems less related to programme format or 'dosage', and more on whether agencies within the criminal justice system communicate with each other, and respond promptly and consistently to the offending behaviour. Whereas references to the 'criminal justice system' in the wider literature on domestic violence have traditionally referred to the actions of police and courts, work with domestic violence offenders has increasingly become an activity in which probation officers are engaged, particularly through the development of structured programmes. In view of the contested evidence about the effectiveness of these programmes, and in the light of the recent accreditation of a model programme in England and Wales, it seems timely to examine whether, as with structured programmes more generally, the significance of individual case-work ought to be more fully incorporated into any such evaluation.

The Programme Study

In 2003 a small-scale study examined the implementation of a domestic violence offenders' programme in Scotland. Perhaps not surprisingly the study revealed that despite systems being in place to maximise the 'integrity' of the programme itself, its potential impact depended considerably on the activities of individual caseworkers in their work with probationers, and their partners, outside the programme. This study was conducted in a large urban setting where almost a quarter of the criminal justice workforce had received training on the programme's theory, structure and method (see Note 1). Initially the programme would be delivered by a core of workers from a specialist Probation Support Team, (PST). Thereafter each cohort would contain one or more 'programme trained' workers from several patch-based teams in the authority (Area Teams). This model, whereby programmes would increasingly be delivered by workers from outside the PST was aimed at disseminating good practice and programme knowledge throughout the organisation. One possible disadvantage of such an approach however was that knowledge and expertise might become diluted as a wider, more diffuse, less experienced group of workers became involved in programme delivery.

The principal concern of management and key staff in the discussions preceding this study was whether the programme 'worked' i.e. to what extent did it impact upon men's violent and abusive behaviour? However eighteen months after inception it was evident that the impact of the programme itself would be well nigh impossible to pin down. During this period the programme had been adapted and refined to suit local conditions, with successive cohorts of the programme being delivered by combinations of workers with different levels of experience in and approaches to programme delivery. There were clearly substantial practical and methodological limitations around a study which focused solely on outcomes at this early stage (See Note 2).

Two research themes were therefore agreed upon. As far as the authority itself was concerned the study would address the extent to which their domestic violence programme was achieving 'programme integrity' i.e. the degree to which a programme is delivered as designed and planned (Hollin 1995).

However as men's attendance on the programme was a requirement of a probation order, another key theme would be to look beyond programme integrity to the issue of programme integration, exploring how programme themes, concepts, values and practices seemed linked to wider probation practice within the agency. Significant attention would be paid to those phases where programme and one-to-one work interfaced; the pre-programme phase, the time of men's actual attendance on the programme, and finally after men had completed the programme but still remained on a probation order.

Interviews were conducted with five PST staff who were closely associated with programme implementation and delivery, and with ten Area Team staff who had undergone Programme training and had also been involved in running programmes. A further ten Area Team workers (with or without programme training) who were currently involved in supervising men who had been on the programme were also approached. A preliminary examination of the PST database (See Note 3) coupled with the comments and observations of the workers interviewed suggested that there was considerable inconsistency in the extent to which the new resource was made use of across the authority. The possible consequences of this inconsistency in contributing to, or detracting from, the impact of the programme are explored below.

Working on the Programme

One of the most striking comments made by the programme workers was that working with this client group was 'substantially different' from their experience of group-work with other offending clients. In particular the levels of denial and resistance to engagement that many men presented were higher and their negative attitudes to women partners deeply entrenched. Significantly work in the groups seemed to be less about encouraging people to 'develop skills to overcome offending' and more about confronting men's ingrained attitudes and beliefs.

'They're very difficult clients who.. at the beginning of the programme were very much, defences up, denying a lot of behaviour, or minimising it, and to begin to break that down was so hard. The first probably eight weeks of the programme was really, really tough.'

Programme Worker: Female

Demand for programme places had varied widely across the authority but interestingly had surged dramatically in some local areas. This increase in volume and the pressure to provide a service promptly had resulted in groups varying considerably in style and atmosphere. Despite attempts to maximise the integrity of each programme cohort, it was immediately clear that programmes differed substantially from group to group, and thus provided qualitatively different experiences for the men attending them. While uniformity is neither achievable nor necessarily desirable, and while each group inevitably produces its own dynamic, Gondolf (2002) concluded that programme instability impacts negatively on effectiveness. Given the potential for instability during a pilot phase or at times of considerable organisational pressure, the role of case workers is clearly crucial in terms of supporting or augmenting the work of the programme itself.

Preparing men for the programme

Gondolf's 2002 research, in examining the connection between the wider criminal justice system and men's programmes, emphasises the importance of men entering programmes promptly following conviction, and of being promptly sanctioned where they fail to comply. In this Scottish study despite an agency commitment that men should commence programmes 'as soon as feasible' after being placed on probation, the PST database recorded a fairly consistent interlude of three months between men being placed on a probation order and commencing the programme. Some of these delays were undoubtedly attributable to the complexities in the lives of the men themselves:

'Well this guy's life was a mess generally. He had a real bad drinking problem. He wasn't blaming the violence on the drink exactly... but before we could get him to look at any thing he needed to get stabilised in some way, just even sober up. Then ... he had been put out of the house, so he was at his brother's then out of there...eventually he got a room. So there were all these pressing issues to address...and that was in the first five weeks, ...or maybe longer, say eight weeks before we finally could get him onto the programme...'

Area Team Worker: Male

It was also obvious however that other work priorities and pressures on time and resources were impacting on the length of the pre-programme period. Despite attempts to reduce this, principally by increasing the frequency with which cohorts ran, or by (unsuccessfully) attempting to run 'pre-programme groups', the reliance on workers from busy Area Teams to co-run programmes meant that their time had to be freed up by colleagues and local managers. Workforce wisdom suggested that these pressures were longstanding and were also likely to continue for the foreseeable future. If so what did this mean for men going onto the programme? Both programme workers and case-workers were asked about what was taking place during this period. Was this seen as a time of crisis such as that outlined above, as a 'waiting period' before attention to the man's use of violence could begin, or as an opportunity for important preparatory work to be commenced? The answers to these questions unfortunately were often less than clear.

Programme workers' views (pre-programme)

Programme workers commonly felt that men often turned up 'totally unprepared', uneasy and anxious about coming to a group, fearful in the words of one participant that it would 'put me in the spotlight.' Such anxiety was a significant inhibitor in terms of men's engagement:

'When men come in they're in a very high level of denial. You very rarely get one that will admit to anything...Their anxiety levels are so high that you could scrape them off the ceiling for the first four weeks and I think that stops us doing the job we need to be doing. They're so anxious about having to sit in a group and talk about violence that for the first couple of weeks you're having to do basic group-work stuff.'

Area Team / Programme Worker: Female

Men's denial of personal responsibility was a constant refrain in programme workers' accounts. While they sympathised that their Area Team colleagues had many priorities to balance there was a feeling nevertheless that more needed to be done to prepare men for the programme. If for example they could focus more on men's resistance, so that men had begun to accept some degree of personal responsibility for their actions when they entered the programme, the programme's early impact might be enhanced.

It could of course be argued that these difficulties, of delayed entry and competing priorities, refer specifically to this particular authority, and represent difficulties which management might in time overcome, (for example by developing an 'open' group process). However the comments and observations of this sample of criminal justice social workers echo many of the tensions which consistently arise concerning the boundaries between 'case management', 'case-work' and 'structured programme.' The programme workers in this study had prevaricated for example in developing a pack that caseworkers could use during the preparation period, offering an optional set of tools to work with men, on issues such as jealousy, alcohol and 'anger'. Such ambivalence reflected a real tension within the authority, and within probation services more widely, about formulaic programmatic methods superseding other more individualised approaches. Some workers for example were concerned about the imposition of another 'tool-kit' which might imply a lack of confidence in those professional skills and qualities which criminal justice social workers routinely brought to their work with clients. On the other hand doubts were also expressed (by programme workers and Area Team workers alike) about the consistency of those same skills across the authority, and, significantly where male violence was the issue to be addressed, of the values and attitudes which were needed to underpin them.

Area Team workers' views pre-programme: risk and resistance

For Area Team case workers, their experience of engaging with men prior to entry into the programme was that of working with complexity, sometimes dealing with a number of apparently incompatible tasks. At the same time as they might be determining the risk which men presented to their partners they might also be trying to engage with men who presented as angry, blaming of others and highly resistant to the idea that they were 'wife batterers'.

Some wondered whether confronting or challenging men too robustly might heighten their resistance, as Miller and Rollnick (1991) have suggested occurs in working with substance abusers; or even whether this might in fact aggravate men's risk to partners. They had to manage a balancing act of confronting men with the seriousness of their behaviour and stipulating the consequences while at the same time encouraging men to see the programme as an experience from which they might benefit.

The confidence and clarity which case workers brought to pre-programme engagement seemed to vary considerably. Some stated that while they felt more confident about 'confronting and challenging' men's denial, they were hesitant about issues they would pursue thereafter, such as the 'association' between alcohol and violence. Others worried that their efforts might overlap

with, but more particularly undermine, the work of the programme:

'Because I'm quite familiar with the content of the Programme, I'm not wanting to give men a half measure you know? ... a half idea about what it's all about but not getting into it in any depth. I worry if you give them too much of a flavour of what's gonna be on the Programme that they're going along to and, ... "Oh I know all this!" kind of attitude!.'

Area Team Worker/Programme Worker: Female

Thus while programme staff looked for men to arrive 'prepared' in some way for the experience, their Area Team colleagues were faced with the complex situations of men's individual circumstances. The degree of risk they presented to their partners, or to themselves, was often the most pressing concern at this time. For the most part they also were dealing with highly resistant clients who were not yet at the 'stage of contemplation' defined by Prochaska and Di Clemente (1992) as being necessary for any personal change to take place. While this observation might seem rather obvious, it nevertheless highlights the complexity of attempting to discuss programme effectiveness in such a way which excludes or ignores other factors in the lives of the participants themselves. To do so also certainly discounts the influence which individual workers contribute to the overall process of motivation, engagement, participation and maintenance.

Integrated working when men attend the programme

The theme of inconsistency persisted when the study focused on the workers' experience of integrated practice during the time men actually attended the programme, and it was useful to try and determine why this might be so. Why might it be that only some men appeared to benefit from an integrated response, in which individual workers and programme workers were, as one said, 'all singing from the same hymn sheet', that is sharing an understanding of the value of a programmatic response while engaging with the complexity of the individual's own circumstances?

Those programme staff and case workers who were regularly engaged with the programme for example spoke about having been involved in a 'steep learning curve' not only about the programme itself, but also about the prevalence of male violence and the extent to which it had featured in their caseloads over the years, (sometimes recognised, sometimes not). Their own burgeoning awareness had led them to ask sometimes searching questions about instances where casework colleagues' practice seemed to be minimally connected to, or allied with the aims of the programme, in short, where they were clearly not singing from the same hymn sheet. Could this all be put down to workload pressure? Were workers simply unaware or poorly informed about the dynamics of the violent behaviour of men on their caseloads? Did some have particular difficulties in addressing this issue? Were some denying the seriousness or even tacitly colluding with the men's behaviour and attitudes? There was a general concurrence with the view that there seemed to be less evidence of male workers referring men or subsequently engaging with the programme. There was also a feeling among some programme and case-workers alike that there might in fact be some resistance to the programme. It was also evident from the comments of many of those interviewed, that at least some of this resistance might be

less to do with the programme per se and more to do with the apparent imposition of 'programmes' as the paramount method of intervention, and the consequent subordination of other more holistic methods of working with clients on an individualised basis.

Examples of integrated practice

By contrast there were also particular workers and specific team settings where more integrated practice was evident and where workers were enthusiastic in using the programme as a resource to assist their one to one work with men. The factor that was most commonly referred to as far as area teams were concerned was the presence of a manager or senior worker who was responsive and enthusiastic and who encouraged their staff to engage with the programme. (This seemed to be related not only to domestic violence programmes, but to a more general willingness to embrace innovative ways of working).

'Our senior here is good. I think that people are more aware about what works and what doesn't. And if you've got that in the team...and someone who'll let you try out new ways...it helps. I think if you look at our team we're like that. There's a kinda buzz ...which is good.'

Programme Worker / Area Team Worker: Male

Problem recognition and awareness of how to engage with it seemed to be important. In one team with a large proportion of women workers, there was already an established awareness of, and commitment to challenging the issue of men's domestic violence where it routinely appeared. The existence of a domestic violence programme was seen as a key element of the probation order but also as something which functioned as a resource to them as workers, providing additional consultation and advice in relation to the man's violent behaviour, but also affording them the necessary space to concentrate on the many other issues and problems in the lives of their clients.

Not surprisingly either, the presence of 'programme trained' workers in various teams throughout the authority also generated and influenced discussion about the prevalence of male violence on caseloads. It had impacted on specific aspects of practice such as assessments for the courts:

'Well, it has an effect on day to day stuff...I mean there are workers who come and say, 'Look I'm not sure about this guy', or, 'Look, this guy, it's a one-off, he's never done it before and he's no' gonna do it again...erm, so we talk about them with that and talk about our experience of that story and how familiar it sounds, (laughs). So aye, they're using us as a resource...'

Programme Worker / Area Team Worker: Male

After the programme

While it was beyond the scope of this initial study to follow up in any depth the nature of the ongoing work carried out with men following programme completion, interviews with programme and case workers highlighted some general concerns about maintaining the momentum begun in the programme. While some comments again apply to this particular authority they are nevertheless recognisable and relevant to many probation settings. Protocols for monitoring and reviewing men's participation in the programme and their progress thereafter had been set up. It was difficult to establish how effectively these procedures operated however, and particularly whether programme recommendations were taken forward in one to one work. This drift away from accountability and clarity was unhelpful inasmuch as it obscures examples of both good and bad practice which might enhance or undermine the impact of 'programme effect' upon men's attitudes and behaviour.

A recurring concern of some of the programme workers was that for many men on the programme, 'work had only just begun', or 'things were just beginning to sink in' around the time they had completed their requirement to attend. Even after men had completed the programme, workers were often explicitly concerned about the risk which some of them still presented to their partners, and of how their concerns were being taken on board while the men remained on probation orders, (and thereafter!).

'Some clients don't require that high level of intervention; some require serious fortnightly contact at the very least. They need structured work to continue the process, structured co-gendered work. Again we can prioritise high risk because some of these guys are so incredibly dangerous they should not be worked with alone. So that's good practice, that's what should be happening.'

Programme Worker: Male

It seemed to be the case that both quantity and quality of work carried out with men after they left the programme depended on the inevitable issues of time, resources, comprehension about the programme, workers' commitment, and significantly understanding of the nature of male violence. Thus while programme workers' concerns were again often justified, some Area Team workers were able to provide graphic accounts of their ability to link individual work to that of the programme:

'I had two guys who went through it and...with one it was quite clear what I needed to work with him on afterwards and I got that information from the programme worker. I did that work with him...maybe because I had done the programme as well, maybe it was easier for me because I knew he's done it and I knew what areas to work with him. It was like...he just couldn't get empathy! He just couldn't understand things from his partner's point of view... We kind of worked away at that. The...last time there was a domestic incident was six months ago, which considering it used to be every two weeks, it's you know...an improvement!'

Area Team Worker: Female

Others spoke of the need to take other significant factors in men's lives into account:

'[Participant's name] really got a lot out of the programme, but all of a sudden that experience finished and he didn't have that prop, and we had to look again at the whole issue of alcohol in his life...as a factor. Because this was a real major thing for him...major!'

Area Team Worker: Female

Integrity, Integration, Drift and Resistance

It is perhaps inevitable that probation and criminal justice social work authorities will encounter difficulties in setting up programmes so as to provide a sufficiently consistent experience for those who go through them. Each cohort is somehow different and requires constant monitoring and fine-tuning both to 'maximise' programme integrity yet allow some flexibility for staff to respond spontaneously to individual characteristics in the life of each group and its members. It is obvious therefore that attempts to gauge the impact of a programme per se need also to be based upon several factors. These include the needs and problems in the lives of the participants themselves, their motivation or resistance to intervention, the particular risks which each presents, the nature of their relationship with the professionals they encounter and indeed the skills and qualities of these professionals.

The evidence emerging from this small study is arguably relevant for many probation and social work settings. It suggests that while a programmatic approach can be highly appropriate both in terms of concentrating resources and indeed in helping clients concentrate on the primary issue of their offending, in this case violent and abusive behaviour, what transactions occur outside the environment of the group but with the wider framework of the probation contract are also crucial. When workers spoke for example of their concerns that men who often took several weeks to reach the programme (a concern in itself) sometimes left it when they had, 'just begun to get it' there are obvious concerns about the lack of detailed knowledge about what goes on thereafter between client and caseworker or case manager.

Other points made by many of the workers interviewed raised fundamental issues about the complexity of adopting an agency wide approach to an issue such as men's domestic violence, behaviour which until very recently was regularly diverted away from the official scrutiny of probation officers' attention. No matter how robust the programme integrity of any particular programme, the overall integrity and thus effectiveness of the wider response to these offenders was affected and arguably undermined by inconsistency of workers' practices and attitudes across the authority, which in turn impacted upon the probation experience on clients' lives. Further investigation (Morran, in progress) is currently being undertaken into what occurs in the way of supervision and support for men on domestic violence programmes, and crucially for their partners, during the remainder of their probation order (and significantly thereafter!) While some clients may encounter case workers who are informed (in this case about domestic violence), and bring skills and attitudes to their work which augment and enhance the overall approach of a probation order, there are others whose experiences are less positive, or less

challenging. While programmes themselves might counteract such an imbalance, it would be worrying if the programme was seen as the only forum in the wider context of a probation order where men's use of violence was directly or consistently addressed. It would also be worrying were the 'lens' of the programme to be so narrow as to focus solely on the 'offending behaviour' to the exclusion of other troubling issues, problems and risks in that individual's life.

Thus while programmes are undoubtedly valuable and have had a significant effect upon the way in which male domestic violence for example has come to be responded to by the probation and criminal justice social work services, it is necessary to look beyond them. It is essential to question what at times appears as an almost obsessive concern with the minutiae of their sequence, detail and structure; a process that has been referred to critically as 'programme fetishism.' Similar concerns have recently been voiced by McNeill (2002), who, upon examining the findings from research upon criminal careers and on desistance from offending, suggests that earlier pre-occupation with 'dosage' in much 'what works' literature overlooks the 'complex personal, inter-personal and social contexts' of why change occurs and why people stop offending'.

Conclusion

The emerging literature on desistance from offending has begun to explore the complexity of the processes and the circumstances in which people may move between states of resistance, vacillation, persistence and the maintenance of patterns of personal and behavioural change, (Rex 1999; Maruna 2002). In the case of men who would commonly resist the intrusion of the criminal justice system into the 'private business' of their relationship with their partners, (whom usually they see as being responsible for 'causing' them to be violent), the process of change is indeed complex and is daily influenced not only by the patriarchal society in which they / we live, but is affected also by their past and present experiences of negotiating the complexity of their lives and the changing nature of their relationships with others. For such men to begin and sustain change it is clear that domestic violence programmes will play only one part in this process and that we have much yet to learn in terms of what might contribute to and maximise the opportunities for desistance for these men and thus safety for their partners.

Research into the effectiveness of domestic violence programmes, and offending behaviour programmes more generally, must acknowledge not only the wider social contexts in which people offend, but also needs to look more at what can help sustain longer term maintenance of behaviour and attitudinal change. In order for McNeill's 'complex personal and inter-personal contexts' of behaviour change to be addressed therefore, any programme has to underpinned by work on motivation to change, the development of trust, engagement and participation, and of modelling behaviour and professional values that have proven to be so significant elsewhere in work with offenders (see Burnett 2000, Rex 1999, Trotter 1999, 2000). These professional skills cannot be underestimated, nor should they be subordinated, or marginalised within probation practice. Where case workers exhibit these skills in their one-to-one work with offenders, and have these skills valued, they surely enhance the potential effectiveness of any programme, just as a programme may enhance the skills of that individual worker. This then is the essence of a truly integrated approach to working with people who offend.

*Note 1: Subsequently a further twenty workers underwent training on programme delivery.

*Note 2: Additionally the fact that in the past the author had been involved in the development of the original programme adopted by the agency raised legitimate questions and concerns about the 'researcher objectivity' which he would bring to a study of whether the programme was 'effective'. Despite this it was agreed that his 'insider' knowledge could be advantageous in terms of understanding programme content and process, as well as the demands of working with domestic violence offenders. Consequently a research agenda that satisfied both the objectives of the authority and the author's own interests as a researcher / practitioner was established.

*Note 3: At the time of the study seven cohorts of the programme had been completed comprising a total of 120 men who had actually been on a programme at any one time.

References

- Gondolf, E. W.** (2002) *Batterer Intervention Systems. Issues, outcomes and recommendations.* London; Sage.
- Hedderman, C. and Sugg, D.** (1997) 'Part II: The influence of cognitive approaches: a survey of probation programmes.' In Vennard, J., Sugg, D. and Hedderman, C. *Changing offenders' attitudes and behaviour: what works?* Home Office Research Study 171. London; Home Office.
- Hollin, C. R.** (1995) 'The meaning and implications of "programme integrity".' In McGuire, J. *What works: Reducing reoffending – guidelines from research and practice.* Chichester, UK; Wiley.
- Maruna, S.** (2001) *Making Good: How Ex-Convicts Reform and Rebuild Their Lives.* Washington DC; American Psychological Association.
- Miller, W. R. and Rollnick, S.** (1991) *Motivational Interviewing: Preparing People to Change Addictive Behaviour.* London; The Guilford Press.
- McNeill, F.** (2002) 'Beyond 'What Works': How and why people stop offending'. Briefing Paper 5: August 2002. Criminal Justice Social Work Development Centre for Scotland.
- Prochaska, J. O. and Di Clemente, C. C.** (1992) 'Stages of change in the modification of problem behaviour.' In Hersen, M. Eisler, R. & Miller, P. M. (eds) *Progress in Behaviour Modification* Vol 28, pp 184-214, Sycamore Ill. USA
- Rex, S.** (1999) 'Desistance from Offending: Experiences of Probation.' *Howard Journal of Criminal Justice* Vol 38, No. 4, 366-383.
- Trotter, C.** (1999) *Working with Involuntary Clients: A guide to practice.* London; Sage.
- Trotter, C.** (2000) 'Social Work Education, Pro-Social Orientation and Effective Probation Practice,' *Probation Journal* Vol 47, No 4, 256-261.
- Vanstone, M.** (2000) 'Cognitive Behavioural Work with Offenders in the UK: A history of Influential Endeavour' *Howard Journal*, Vol. 39 (2) 171 – 183.

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