



# TheHorseCourse

*working with offenders*



## Evidence Review

Theory of Change & Contribution Analysis

February 2015

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New Philanthropy Capital

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*"We know that talk-based interventions do not work with everyone. We know that activity-based interventions can be very good at engaging those difficult to reach people, but don't always achieve hard outcomes.*

*TheHorseCourse is a truly innovative intervention that has big, proven impacts with the most difficult people - using a carefully designed and evidenced programme to make best use of the action-learning opportunity"*

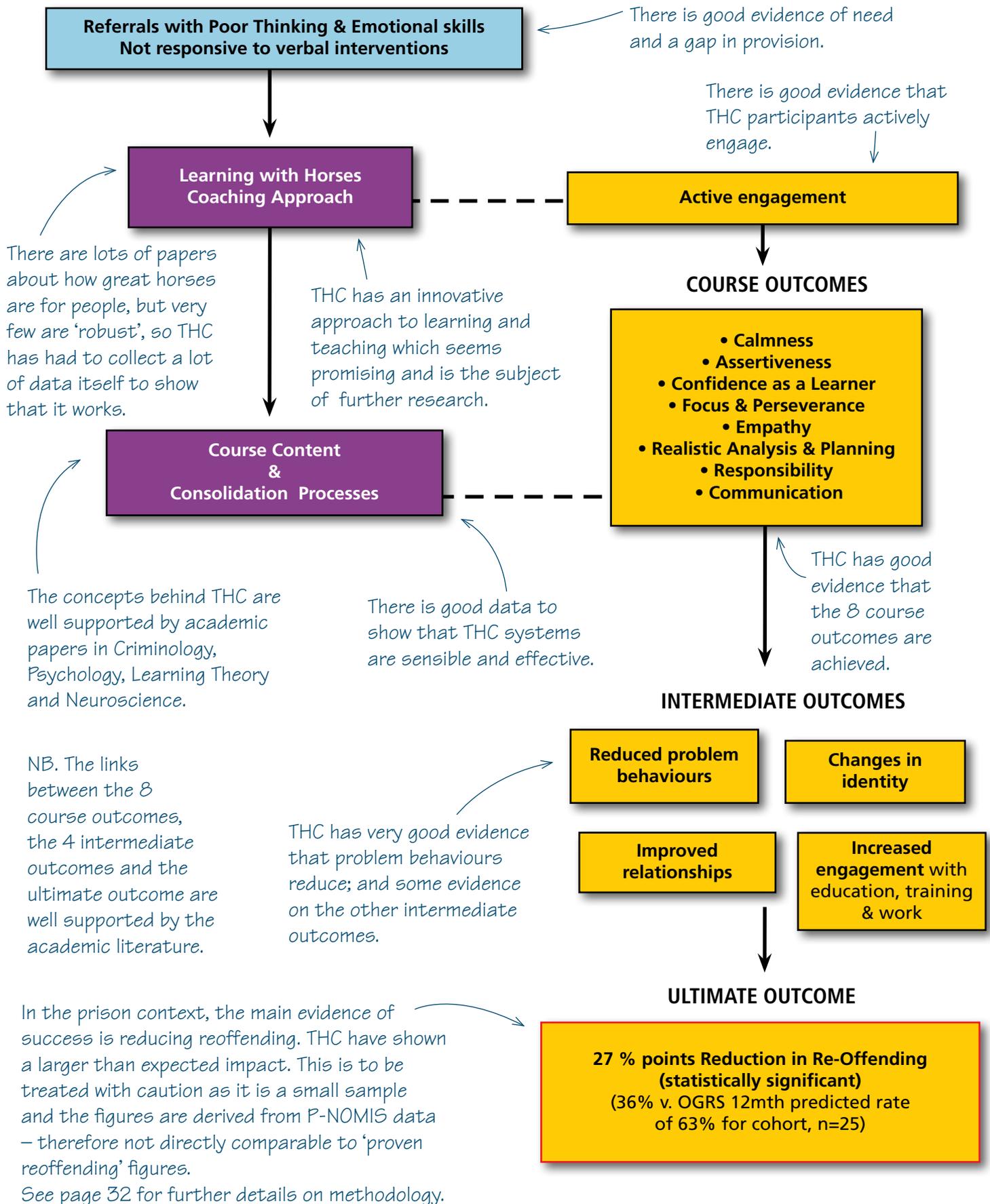
**Lord Jim Knight**, *former Minister for Education  
Patron of TheHorseCourse*

*"TheHorseCourse exemplifies the right attitude and approach towards collecting and analysing data in order to test and demonstrate impact, as well as develop practice responsively."*

**James Noble**, *New Philanthropy Capital*

# Summary & Conclusions

This document goes into great detail about the way TheHorseCourse (THC) works, the data it has collected to test impact and the evaluation of THC by academics. It also looks at the relevant theory and evidence in the wider world of academic literature. This page is a quick round-up of the conclusions.



**CONCLUSION: THIS INTERVENTION LOOKS VERY PROMISING**

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## Acknowledgements

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## Foreword

This document presents a comprehensive ‘theory of change’ and ‘contribution analysis’ for TheHorseCourse’s (THC) Restart programme in prisons. Our aim in publishing this is to encourage charitable organisations to use the model for their own evaluation activities.

‘Theory of change’ is increasingly suggested by commissioners and organisations like The Social Research Unit, Project Oracle and Nesta, all of whom regard it as the first element of their evidence standards.

This theory of change is more detailed than others might need: We have sought to address the common complaint that charities do not make enough use of published academic or practice evidence. Also, TheHorseCourse is an innovative and novel intervention. For more conventional projects, such as mentoring, a shorter evidence review might be enough.

TheHorseCourse was also able to bring together its own data to test the theory of change – including attendance figures, soft outcomes measures during and after course delivery, interviews with participants and staff and even reoffending data for a small sample.

Evidence is often equivocal – it rarely yields a yes/no answer to the *Does it Work?* question and there is a need to weigh up evidence and form a picture. Throughout the document, we remind you to treat the findings cautiously, particularly because sample sizes are small so we haven’t had access to all the data we would like. Despite this, we believe that it’s very important to consider all the information we have to build as full a picture as possible.

With this in mind, the fact that THC has achieved very positive results should not be taken to mean that the programme will work in all circumstances. But these results clearly merit further investment and investigation. If subsequent analyses confirm these results, the programme is, indeed, very effective .

This is how the accumulation and synthesis of knowledge should work. We need to share descriptions of our work and all the results – both positive and negative – along with an honest assessment of the quality of the data, *so we can all learn*. This is how other sectors like medicine achieve increasing levels of expertise and success. We still have a long way to go in the Criminal Justice voluntary sector but hopefully projects like this can show the way.

**David Pritchard: Head of Measurement & Evaluation, New Philanthropy Capital**



## TheHorseCourse theory of change and contribution analysis

### 1. Introduction

TheHorseCourse (THC) is a charity that delivers an equine-assisted intervention called ReStart in prisons and in the community. In prisons ReStart focuses on high-risk, disengaged and disruptive offenders who are hard to reach through other interventions.

The programme uses Parelli Natural Horsemanship<sup>1</sup> tasks to develop emotional and thinking skills and patterns of positive behaviour. Participants work with horses that are trained to provide feedback, which helps them to gain awareness of their behaviour and its consequences. Participants learn that they can only successfully instruct the horses if their communication is calm, clear, assertive, and focused.

To date THC has worked with more than 70 men and women in four UK prisons. Referrals are made according to need: the course is best suited to people suffering social exclusion due to a lack of emotional or thinking skills, and who have struggled with verbal interventions. In this document we focus on a cohort of the first 25 participants from HMP Portland for whom it has been possible to track rates of reoffending.

The document presents a **theory of change** and **contribution analysis** for ReStart in a prison setting. It is broken down into the following sections

- **Section 1** introduces the concepts of theory of change and contribution analysis.
- **Section 2** outlines the theory of change diagram, with a detailed description of what THC does and what it is intended to achieve.
- **Section 3** discusses broad existing academic and practice evidence to suggest why THC may be successful (see tables 3.2 - 3.4).
- **Section 4** outlines the contribution analysis which assesses findings so far to show what THC has achieved, including analysis of reconviction rates compared to the predicted rate for the cohort (see table 4.1).
- **Section 5** draws conclusions and assesses this evidence against standards set out by National Endowment for Science Technology and the Arts (NESTA) and the National Offender Management Service (NOMS).

#### 1.1 Intended audience and aims

The proposed audience for this document is twofold:

- Smaller charities interested in models for presenting their own evidence review, theory of change and contribution analysis,
- THC stakeholders and commissioners interested in understanding more about THC's programme and the evidence to date to support efficacy.

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<sup>1</sup> <http://www.parelli.com/about.html>

Part of the aim of this document is to provide an example of this approach to project evaluation, from which other voluntary organisations can learn. However it's important to bear in mind that most other charities would not need to go to this level of detail.

TheHorseCourse is relatively innovative, while other interventions tend to have a more established evidence base. If you're interested in this evaluation approach then the most important thing to note is the process we went through, the questions we ask and the kind of data that we have collected. It should also be noted that this document is not a formal evaluation. Neither of the authors are academics (although several senior academics have reviewed and commented, see Acknowledgements). Rather it should be seen as a compilation of the available thinking and evidence around the intervention, published in the spirit of learning and sharing what has been achieved so that others can benefit. We encourage more providers of criminal justice services to do the same thing.

## 1.2 Introduction to theory of change and contribution analysis

**Theory of change**<sup>2</sup> is an approach to service design and evaluation that describes the context for a project, how it is intended to work and the existing evidence that supports it. For voluntary organisations preparing a theory of change has a range of benefits, including:

- Getting a better shared understanding of a service and its long-term aims.
- Providing a useful way to communicate about a service.
- Helping organisations determine what evidence they need to collect.

By outlining the key elements of a project, a theory of change can also be an important part of preparing a project for wider roll-out, especially when the work is innovative. This is particularly relevant for THC in prisons which has gone from 'innovation' to 'showing promising results', and now needs to be better understood to ensure continuing development, replication, and funding.

### Box 1: The Theory of Change Process

The stages of developing a theory of change are:

- 1) Confirm the project's user group and their needs
- 2) Consider what the existing evidence says about this user group and what has been shown to be effective before.
- 3) Agree the long-term goal(s) for service users the project aims to achieve.
- 4) Identify the intermediate outcomes that will help service users reach the long-term goal(s).
- 5) Describe the activities that a project delivers, the process or mechanisms through which activities work and how users are expected to engage.
- 6) Bring these together in a theory of change diagram.

<sup>2</sup> For more information about theory of change go to <http://www.clinks.org/sites/default/files/TheoryofChangeGuide.pdf>

**Contribution analysis**<sup>3</sup> is a recognised process for assessing whether a theory of change has been achieved. In particular:

- Whether a service has been delivered as planned.
- Whether outcomes have been achieved.
- Whether these outcomes can be attributed to the service.

### Box 2

Our suggested approach to contribution analysis also has a number of stages, outlined below:

- 1) Compare data collected to the theory of change.
- 2) Assess congruence: do the results match the theory?
- 3) Disaggregate results (look at patterns of results and outcomes among different service users).
- 4) Consider other explanations.
- 5) Ask participants and facilitators for their views on the project's effectiveness.
- 6) Make counterfactual comparisons (an estimate of what would have happened if the project had not been run).
- 7) Analyse costs and benefits.
- 8) Consider what has been learned.

## 2. TheHorseCourse theory of change

This section outlines the theory of change for THC following the steps set out in Box 1.

### 2.1 Confirm the service user group rationale for the project

THC's service users are young offenders (17-24) convicted for a range of offences who have a high risk of reoffending as determined by the OASys system (NOMS's Offender Assessment System). There is good evidence to support the positive impact of cognitive skills programmes on reoffending for this group.<sup>4</sup> There is also evidence that cognitive behavioural programmes can work particularly well with higher risk offenders.<sup>5</sup> However, it has also been observed that some prisoners are unwilling or unable to make progress through cognitive or verbal interventions, and these individuals retain poor thinking, social and emotional skills.<sup>6</sup> Within prisons this is evidenced by failure to engage with, or exclusion from, classroom-based offending behaviour programmes; by disruptive behaviour; and by high scores on standardised OASys questions.

<sup>3</sup> See for example, <http://www.scotland.gov.uk/Resource/Doc/175356/0116687.pdf> and [http://betterevaluation.org/plan/approach/contribution\\_analysis](http://betterevaluation.org/plan/approach/contribution_analysis)

<sup>4</sup> (Ministry of Justice 2010)

<sup>5</sup> (Ministry of Justice 2013, Sadlier 2010)

<sup>6</sup> (Bryan, Freer and Furlong 2007)

THC's evaluation work in HMP Portland therefore targets offenders with a higher risk of reoffending (over 50%) who have not engaged fully with other programmes while in custody and who may be disruptive and disengaged.

## 2.2 Agree the long-term goal

The long-term overall goal of THC is to reduce social exclusion. More specifically, in prisons the goal it is to reduce the likelihood of participants reoffending after release.

## 2.3 Identify intermediate outcomes

Intermediate outcomes are shorter-term changes in service users that have been shown by previous research to contribute to long-term goals. They are identified by working backwards from the long-term goal to ask '*what has to happen in order for this to be achieved?*'

Based on the needs of this cohort and the factors known to help individuals desist from crime,<sup>7</sup> four main intermediate outcomes are identified for THC:

- 1) Reducing problem behaviours.
- 2) Improved relationships—being better equipped with pro-social skills to manage human interactions.
- 3) Increased engagement with education, training and work opportunities.
- 4) Changes in identity from criminal to effective learner and good citizen.

## 2.4 Describe project activities and causal mechanisms

The ReStart course comprises seven two-hour sessions for two participants at a time, working with one facilitator and two horses within the prison grounds. It lasts between four and seven days.

Working with specially trained horses, participants learn to be benign, trustworthy and effective leaders. Activities with the horses are un-mounted and performed at liberty, or with great attention to the 'feel' on a rope. This ensures that participants are modelling calm, assertive, focused and clear communication at all times, as opposed to coercing or man-handling the horses. Participants are set challenges ranging from simple manoeuvres, such as backing a horse through a gate from a distance, to harder tasks like asking a horse to place a hind hoof on a target it cannot see.

THC began with the aim of creating an effective horsemanship-based equine-assisted intervention. Parelli Natural Horsemanship (PNH) was chosen as the foundation for the approach on the basis that the THC founder considered it to be a pro-social, logical, clearly defined and effective style of horsemanship which lent itself to human development, both in philosophy and practice.

PNH is at the forefront of the global 'Natural Horsemanship' movement and represents an approach developed in the US over the past 30 years. It is a comprehensive system of horse training that aims to achieve a harmonious partnership between horse and human. It is

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<sup>7</sup> (Ministry of Justice 2013)



formally assessed at four levels that gradually developing the horse/human relationship; from Level 1, which covers safety and basic competence, to Level 4 in which horses and humans work in graceful harmony both on the ground and when riding. Furthermore, PNH offers advantages such as a defined grading system, comprehensive and coherent principles and philosophy and a rigorous instructor training programme.

In the final session THC participants are filmed for external assessment by Parelli USA and typically achieve high Level 1 grades.

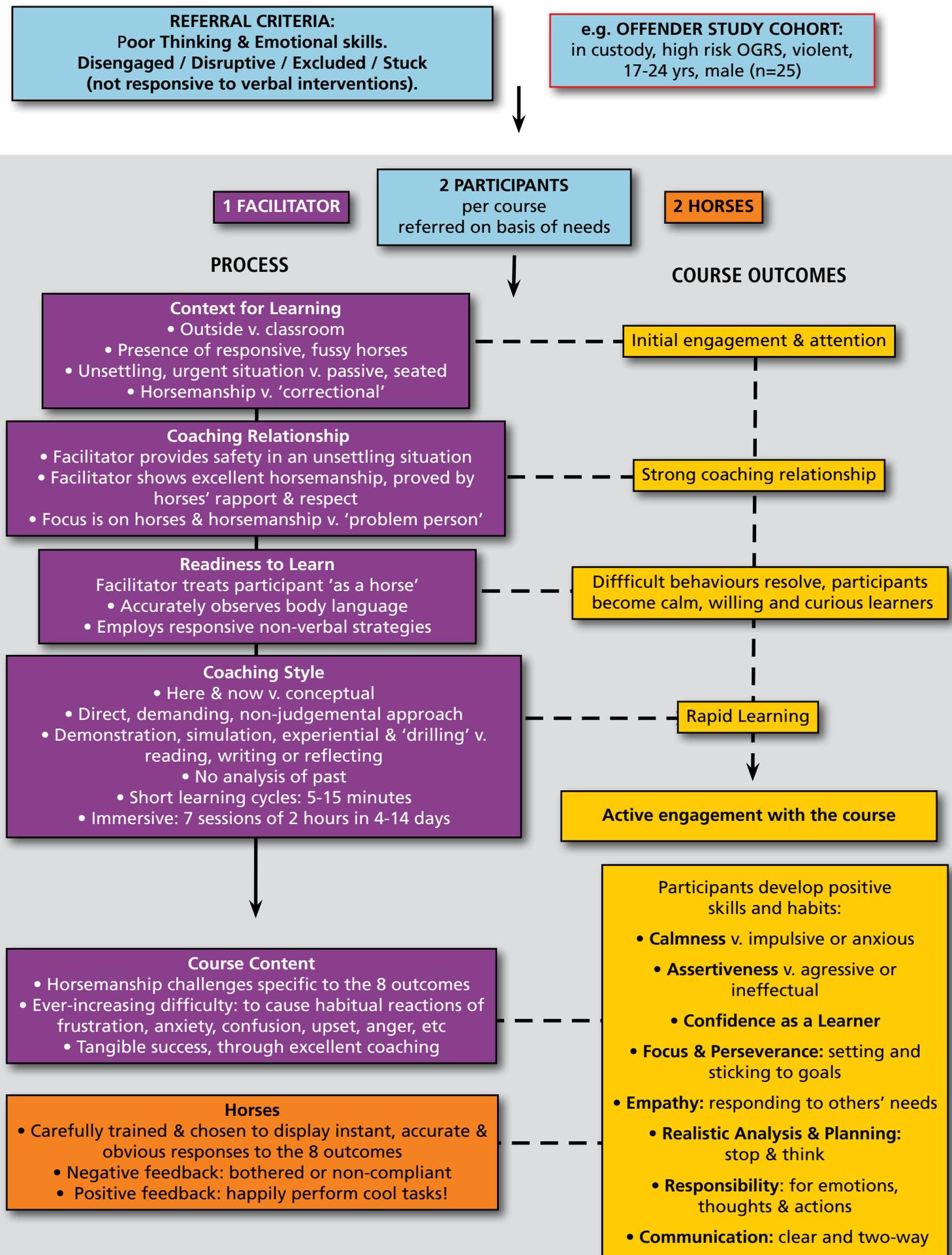
Through this theory of change process THC's founder, with help from a group of academics and analysts at NPC, has articulated a series of mechanisms through which participants appear to make positive and lasting changes to their emotional controls and thinking as a result of THC. These mechanisms are explored and evidenced in the diagram and tables below.

The use of horses is an established practice in criminal justice contexts, however THC aims to explore the opportunity to maximise efficacy through choice and training of horses; choice and training of facilitators, and also aims to address a well-documented problem in the field, namely the lack of clear definition of methodology and underlying principles (for example some practitioners employ a psychoanalytic approach, others a person-centred approach in which the participant is believed to hold the answers to their own problems, others perceive the horse as a spiritual guide).

## **2.5 The theory of change diagram**

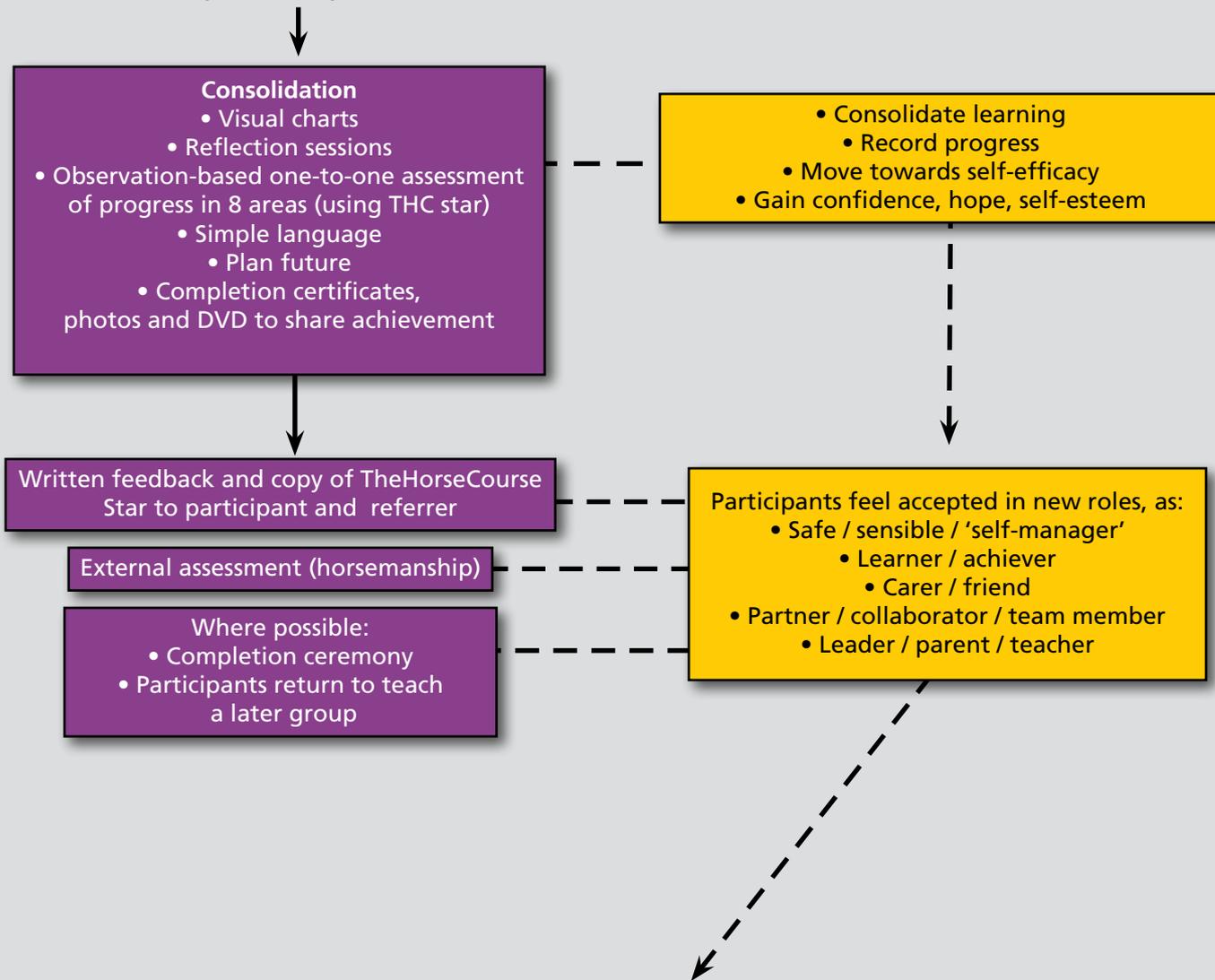
A theory of change is often presented as a diagram outlining the causal pathway to the ultimate goal. THC's theory of change for the ReStart programme in prisons is shown below.

# TheHorseCourse "ReStart" Intervention Theory of Change & Key Outcomes



(continues)

## THE PROCESS (continued)



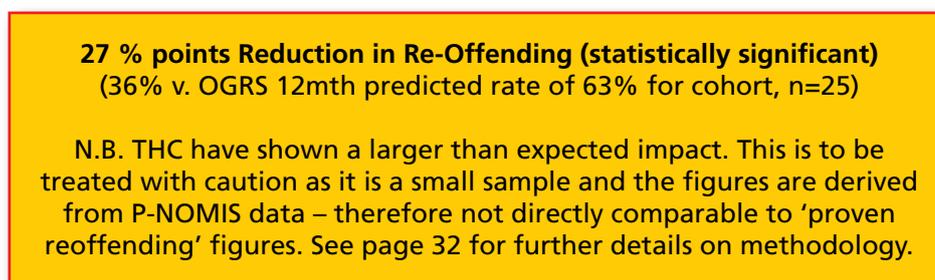
## INTERMEDIATE OUTCOMES



## INTERMEDIATE OUTCOMES for OFFENDERS IN CUSTODY



## ULTIMATE OUTCOME for OFFENDERS IN CUSTODY



### 3. The existing evidence for the theory of change

When creating a theory of change we need to 'look backwards' at the existing evidence that supports it. This process is aimed at strengthening our understanding and description of why we think the intervention should work. This can be considered by asking three main questions:

- Why do we think the course activities will lead to the **course outcomes**?
- Why do we think the course outcomes will lead to the **intermediate outcomes** or directly to the final goal?
- Why do we think the intermediate outcomes will lead to the **final goal**?

This section presents this evidence in a series of tables that address these questions in turn.

#### 3.1 Why do we think the activities will lead to the course outcomes?

Equine-assisted practice (EA)<sup>8</sup> is a diverse field. It ranges from psychology and education professionals bringing an equine 'partner' into their practice, horsemen teaching horsemanship as a metaphor for life, and mystical practitioners claiming to interpret an all-knowing, benevolent horse. THC would describe itself as teaching life skills through the medium of horsemanship; and would differentiate its practice in two ways: Firstly, in terms of the quality of the horsemanship; and additionally the use of physical (Parelli-inspired) strategies to manage and modify human behaviour (rather than relying on verbal interactions).

To date, the published literature on EA consists predominantly of anecdotal reports and case studies.<sup>9</sup> There are some common themes emerging from this and a few robust experimental studies have recently been published, but overall there is a lack of well-designed evaluation and empirical evidence. As such, the EA literature cannot be entirely relied on to underpin the THC theory of change. There is also the problem of a lack of consistency across numerous equine-assisted practices; hence we also draw upon criminology and desistance, learning theory and psychology.

Many behaviour-change programmes are built from an existing evidence-base and designed to meet a specific need. THC, in contrast, is built around the practice of a specific style of horsemanship and may deploy causal mechanisms that are unknown or untested. In our literature review below we highlight any un-evidenced areas that could benefit from more extensive data collection and evaluation. In some cases THC has already collected relevant data (see the contribution analysis in section 4.1).

The tables below breakdown the THC theory of change and discuss the existing evidence for each element.

<sup>8</sup> The equine-assisted field is hampered by contradictory and interchangeable terminology including equine-facilitated psychotherapy/therapy (EAP, EAT) and equine-assisted/facilitated learning (EAL, EFL). For convenience we use EA as a catch-all abbreviation.

<sup>9</sup> (Kaiser L. Spence L., et al. 2004, Karol 2007, R. Thomas 2013)

### Box 3: Why Horses?

There is a lack of robust research-based evidence around the interactions between horses and humans and so the mechanisms suggested below are hypotheses based on the observations of THC facilitators and feedback from observers and participants. Having said this, some factors are frequently recorded in the equine-assisted literature and THC has attempted to maximise impact through careful programme design and quality control.

The choice to deliver the programme with horses does not suggest that they are the only species which might offer valuable interactions. However, Parelli trained horses do have particular qualities which we believe contribute to the work of THC:

- The beauty and presence of a horse is hard to ignore, which helps to engage difficult to reach participants
- The horses' size and power is unsettling for many people, creating a sense of urgency to learn.
- Humans are, we believe, perceived initially as predators (by species) and horses will be wary (unless they have been 'dulled' to humans). As prey animals, horses react to predator behaviour moment-to-moment, displaying instant feedback – eg fearful when a predator is 'sneaky' or aggressive, (this 'mirroring' is well-established, as described in the literature review below).
- Once rapport is established, we believe horses perceive humans as quasi-herd members. There is some academic evidence to support this.<sup>10</sup> As herd animals, horses enjoy calm, empathic connection. Their default mode is relaxation / grazing and they will demonstrate discomfort if the human cannot inhabit the same relaxed state. Attempting to act as leader for an unspoiled horse takes good leadership. The qualities horses seek in a leader are pro-social for humans (calm, confident, communicative, assertive, focused, empathic, energetic, sensible). As handlers learn to display these qualities, the horses offer visible and rewarding cooperation. Feedback from the horses enables participant handlers to see cause and effect between their own presentation and the reaction of the horse – thus taking responsibility becomes hard to avoid. The better trained and more sensitive the horse, the clearer it will be. However, enforced over-exposure to human 'white noise' desensitizes the horse. This could be described as "learned helplessness"<sup>11</sup>. We have found that horses who are desensitized or indeed those who are innately super-confident with humans are less helpful in our work as they are not so fussy nor so demonstrative. We believe that Parelli (not uniquely) offers a system and the professional development necessary to select and maintain these sensibilities.
- There appears to be a built in empathic connection between horses and (most) people: when a horse is bothered or upset it feels horrible to us. Reassuring or nurturing a horse feels good; playing with a horse and gaining cooperation from such a high status animal feels great.
- Well-trained, motivated horses will interact in fun ways – e.g. kicking giant balls, jumping obstacles, precise manoeuvres on loose ropes or at liberty. Facilitators have to be skilled enough to prevent horses from becoming 'trick ponies' through overuse of rewards / drilling; or conversely being man-handled through tasks. Either would compromise the feedback from the horse. We pay great attention in THC to this difficult balance and we believe that high level Parelli training enables us to maximise our horses' potential.

<sup>10</sup> (McGreevy and McLean, Equitation Science 2010)

<sup>11</sup> (Seligman and Maier 1967)

- It is not easy to have a ‘conversation’ with a horse, and to achieve it feels magical. Working at liberty (with no ropes) enables participants to test the quality of the conversation. Parelli provides a framework for this.
- Appropriately trained horses are safe and available and appropriate facilitators are available (though scarce)
- Finally, while human-human communications are often perceived as biased, judgemental, authoritarian there is some evidence that inter-species non-verbal feedback is more palatable (see literature review).

### 3.2 What is the evidence that activities will lead to course outcomes?

Table 3.2 below elaborates on the relationship between activities and course outcomes; describing these in greater detail and highlighting any external evidence to underpin them. Table 4.1, later in the document, looks at the evidence gathered by THC themselves.

<b>Table 3.2</b>	
<b>Causal mechanism:</b>	<b>Course outcomes:</b>
- Learning environment and context	- Initial engagement and attention
<p><b>How it happens</b></p> <p>A critical challenge in many young offender interventions is genuine engagement, particularly for those targeted by THC. THC uses innovative coaching methods alongside the novelty of working with horses to ensure participants actively engage with the course and the learning process.</p>	
<p><b>Existing evidence related to the THC model</b></p> <p><b>Outside vs. classroom learning:</b></p> <p>A range of research highlights the value of training that takes place in an interesting and engaging way<sup>12</sup> and has shown that where learning is more active, prisoners <i>can</i> be engaged and will participate.<sup>13</sup></p> <p>Similarly, NOMS has characterised successful interventions as having an active, participatory style of working, (rather than being mainly educational), and teaching participants skills—particularly social skills such as interpersonal problem solving, conflict resolution, communication, and emotional management.<sup>14</sup></p> <p><b>Horsemanship vs. correctional approach:</b></p> <p>Disengaged and disruptive offenders have often had negative experiences of mainstream education and classroom-based tuition<sup>15</sup> and therefore may find the horsemanship context more acceptable than a classroom programme or a therapeutic setting.</p> <p>A further hypothesis in the theory of change is that offenders’ perceptions of feedback from more traditional sources such as prison staff will be mediated, and possibly tainted by, their feelings about those sources and the power dynamics at play. Conversely, feedback that comes from horses will be seen as neutral and independent and may be more acceptable. However this hypothesis is not supported by any existing evidence we have seen.</p> <p><b>Unsettling, urgent situation vs. passive, seated environment:</b></p> <p>The use of horses is supported by various studies into EA which observed how the size and power of a horse</p>	

<sup>12</sup> (Hurry, Brazier and Wilson 2009, Crossan, et al. 2003, McGivney 2001)

<sup>13</sup> (McNeill, et al. 2011)

<sup>14</sup> (National Offender Management Service 2012), p13

<sup>15</sup> (Hurry, Brazier and Snapes, et al. 2005, Muth 2006, Morgan and Kett 2003)

evokes respect and provides an unsettling experience that ultimately incites curiosity and encourages engagement.<sup>16</sup> Working with a sense of urgency, THC participants are obliged to find 'agency' in order to interact safely and effectively with a horse.

**Presence of responsive, fussy horses:**

Horses are well suited because as prey animals they react to predator behaviour moment-to-moment, displaying instant feedback, whilst as herd animals, they enjoy calm, empathic connection. Moreover, the qualities horses seek in a leader are pro-social for humans (calm, confident, clear communication, assertive, focused, empathic, energetic, purposeful).

THC also believe that the *choice* of horse is extremely important, preferring horses who are selected and trained for maximum responsiveness and to be 'fussy' about their handlers' demeanour and approach. Working with practitioners and horses of a high standard in the Parelli system provides one way to ensure this 'quality control'.

**Causal mechanism:**

- Coaching relationship

**Course outcomes:**

- Strong coaching relationship

**Facilitator provides safety in an unsettling situation & facilitator shows excellent horsemanship - demonstrated by horses' rapport & respect:**

Participants develop a trusting relationship with facilitators while they are gradually helped to feel safe with the horses. This can be seen as a quick and novel way to establish trust between offenders and facilitators, a factor that is widely accepted as central to effective interventions with offenders.<sup>17</sup>

**Focus on horses and horsemanship vs. problem person:**

Restart focuses on horsemanship challenges rather than past issues and offending behaviour. This is intended to diminish criminal identities whilst people are on the course and counter harmful labels such as risky, dangerous, feckless, hopeless or helpless.<sup>18</sup>

In addition, focussing on horses' emotional wellbeing aims to avoid well-practiced 'blocks' to self-scrutiny that might be evoked by a more direct 'correctional' or therapeutic approach, whilst at the same time building skills in observation and empathy (this assumption requires further testing).

<sup>16</sup> (Frewin and Gardiner 2005, Grandin 2005)

<sup>17</sup> (McNeill and Weaver 2010)

<sup>18</sup> (McNeill and Weaver 2010)

**Causal mechanism:**

- Readiness to learn

**Course outcomes:**

- Difficult behaviours resolve, participants become calm, willing and curious learners

**How it happens**

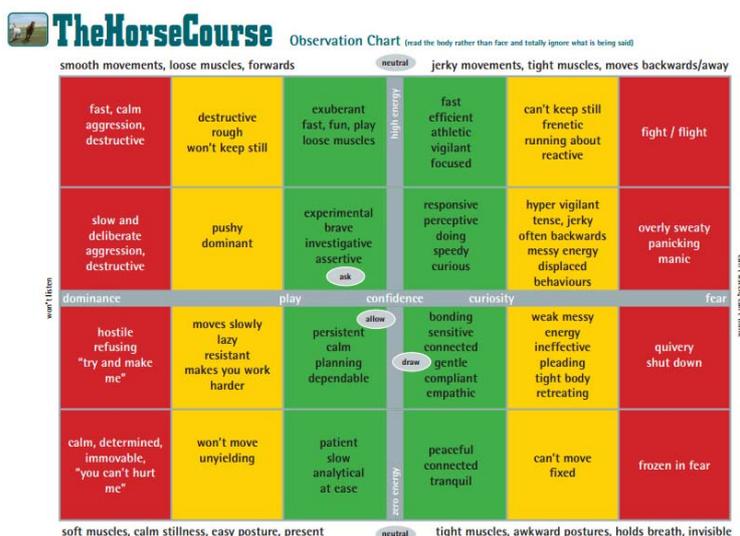
Participants are constantly observed in regard to their 'readiness to learn' and horsemanship-inspired strategies are responsively employed to bring them into a learning state. By the end of the course participants have learnt individually tailored self-management strategies and practiced them repeatedly under increasing pressure (tougher challenges, less support) on the course. Novel, behavioural approaches are employed to ensure calmness and 'readiness to learn' (e.g. approach & retreat, mirroring, over-activity, extreme play, patterns).

**Existing evidence related to the THC model**

Participants are treated as a horse: the facilitator accurately observes body language, employs responsive non-verbal strategies:

Parelli offers a systematic approach to reading horse's body language and responding with appropriate non-verbal strategies to help the horse into a learning frame of mind.

THC has applied this idea to humans and created an Observational Chart<sup>19</sup> (right) on which facilitators plot behaviour and develop appropriate management strategies for individual participants—particularly to reduce troubled or troublesome behaviour. For example, a fidgety or reactive participant might be asked to move faster, rather than sit still and pay attention. The Observational Chart is based on 'Horsenality' concepts defined by Linda Parelli and currently under academic review by Dr Patrick Handley in the USA. This chart has also been used as part of an observational field study of THC<sup>20</sup> but further evaluation is required to assess its value.



This aspect of the theory of change is also supported by the work of neurobiologist Antonio Damasio which emphasises the primacy of emotions in decision making, and by Jaak Panksepp (Panksepp and Bevin 2012) who has identified a shared evolutionary affective history amongst mammals. From this perspective, expecting horse-training methods to work on humans is reasonable given the shared neural heritage amongst mammals. Moreover, THC looks to tap into evolutionarily older emotional systems rather than cognitive thinking, thereby bypassing cognitive barriers that may inhibit engagement with more traditional interventions.<sup>21</sup>

Taking a responsive approach to learners is also well evidenced, in particular the 'Risk, need, and responsiveness' approach which is widely cited in the desistance literature.<sup>22</sup> Indeed, it may be that THC is taking this a step further by attending to emotional needs as well as other demographic and criminogenic factors.

<sup>19</sup> <http://www.thehorsecourse.org/docs/observation-chart-5.pdf>

<sup>20</sup> (Hemingway, Meek and Elis Hill in press)

<sup>21</sup> (MacLean 1990, A. R. Damasio 2012)

<sup>22</sup> (Andrews, et al. 1990)

**Causal mechanism:**

- Coaching style

**Course outcomes:**

- Rapid learning  
- Active engagement with the course

**Here and now vs. conceptual:**

THC espouses the idea 'train the body; let the mind in on it later'. This builds on evidence from neuroscience<sup>23</sup> which argues that by avoiding a conceptual teaching style it is possible to bypass well-practiced cognitive 'blocks' and resistances. Further research is underway to investigate how behavioural techniques can be used to train emotional responses.<sup>24</sup>

**Direct, demanding, non-judgmental approach:**

The importance of THC facilitators taking a non-judgemental approach to establishing relationships and engagement with offenders is an established principle of practice when working with offenders.<sup>25</sup>

**Simulating, experiencing, copying, hands-on help and 'drilling' vs. reading, writing or reflecting:**

Reviews of the literature around "practice skills" in working with offenders tend to conclude that offenders require active and participative rather than either didactic (lecturing) approaches or unstructured or purely experiential methods.<sup>26</sup>

**No analysis of the past:**

In contrast with much accepted practice in EA, the THC coaching style avoids discussion of the past, or psychoanalysis. This is based on the fact that 'active learning' and Cognitive Behavioural Therapy are recognised as offender interventions that work<sup>27</sup> and neither relies on discussion about past events. The horsemanship basis of THC favours a 'here and now' approach. This is an argument that may need further testing and evaluation.

**Short learning cycles of 5-15 minutes:**

As horsemen, THC facilitators are trained to work with horses for a specific change (mental, emotional or physical) and then release all pressure, allowing the horse to rest and process the learning. The THC theory of change assumes that this cycle will also be useful for humans but neither the foundation nor the extrapolation of this idea has been adequately studied and tested, so would be a valuable area for further research.

**Immersive course (seven sessions of two or more hours in quick succession):**

Parelli horsemanship includes the notion that to set new positive habits in horses it is necessary to 'cause' the new behaviour for seven sessions without 'allowing' the unwanted behaviour to be practiced in between. In THC this principle is applied to human course participants and is supported by a growing body of evidence around the fixing of neural pathways through repetition of a response, including emotional responses.<sup>28</sup>

<sup>23</sup> (Damasio and Carvalho 2013)

<sup>24</sup> (Carter and Hemmingway forthcoming)

<sup>25</sup> (Ministry of Justice 2013)

<sup>26</sup> (McNeill, Batchelor, et al. 2005)

<sup>27</sup> (Lipsey, Landenberger and Wilson 2007)

<sup>28</sup> (Coyle 2010)

### Causal mechanisms:

*Course content: How the specific content of the course works to help participants achieve outcomes.*

### Course outcomes

**Participants develop eight positive skills and habits:**

- 1. Calmness**
- 2. Assertiveness**
- 3. Confidence as a learner**
- 4. Focus and perseverance**
- 5. Empathy**
- 6. Realistic analysis and planning**
- 7. Responsibility for thoughts, emotions and actions**
- 8. Communication—clear and two-way**

### How it happens:

THC relies on two key notions:

- If participants model behaviours to which horses respond positively, such as calm and confident leadership, it creates opportunities for learning new behaviours and increased feelings of self-efficacy.<sup>29</sup>
- Horses promote consciousness and self-awareness in participants by acting as a ‘mirror’; actively reacting and giving feedback to human behaviour.<sup>30</sup>

Building upon this foundation, the eight skills listed above are the focus of specific horsemanship challenges and tasks incidental to the course. Specifically:

- Calmness and Assertiveness is learned because these behaviours elicit positive responses from the trained horses, while aggression and / or anxiety do not.
- Confidence as a learner is itself a skill, learned through the sense of achievement participants feel as they see their own rapid progress (often in contrast to previous failures to learn).
- Focus and perseverance are learned because the horses will only keep in step with the participant, with slack ropes or at liberty, if the participant maintains a strong, clear focus
- Empathy is learned by experiencing how observing others compassionately and meeting their needs gains cooperation and closer relationships
- Realistic planning is learned through rehearsal, finding that slowing down, analysing and planning works better than rushing into things
- Responsibility is learned because it creates power and efficacy while blaming others or the situation restricts choices
- Communication skills are learned because progress on the course depends on effective two way communication and mutual respect. Simple language around emotions and thinking starts by observing the horses and progresses to describing human behaviour.

Challenges are increased and support decreased through the course, so that participants practice increasing self-efficacy in all eight areas. There is some evidence of the efficacy of this method of teaching these skills. THC is working hard to test and further evidence the above hypotheses.

<sup>29</sup> (M. Rashid 2004, Burgon 2011)

<sup>30</sup> (Vidrine, Owen-Smith and Faulkner 2002)

### Existing evidence to support this:

Firstly, research on the effects of human-animal interaction has shown that it is associated with improved physical and psychological wellbeing;<sup>31</sup> reduced stress and cortisol levels,<sup>32</sup> and reductions in depression, including increased dopamine production.<sup>33</sup>

Secondly, there is research highlighting the benefits to individuals of specifically equine-based programmes. For example:

- Reduced recidivism following a 200 hour wild horse taming programme in low risk prisoners<sup>34</sup>
- Improved social skills and bonding, including increased oxytocin production.<sup>35</sup>
- New behaviours and feelings of self-efficacy.<sup>36</sup>
- Enhancement of general psychological wellbeing.<sup>37</sup>
- Calm and confident leadership.<sup>38</sup>
- Confidence and psychological resilience.<sup>39</sup>
- Mental health, empathy and relationship skills in adolescents.<sup>40</sup>

Most recently a randomised controlled trial focused on the effectiveness of natural horsemanship techniques to improve child social competence and has reported moderately significant improvements, including reduced basal cortisol levels.<sup>41</sup> Thirdly, in a prison context, mustang programmes in the US have been associated with reduced behavioural infractions, increased empathy, increased self-esteem assertiveness and increased responsibility and autonomy.<sup>42</sup>

Finally, research on EA therapeutic environments have indicated that skills learned can be transferred to participants' daily lives and lead to improvements in psychological wellbeing.<sup>43</sup>

The field of Equitation Science has yet to come to any firm conclusions as to whether horses recognise human body language as analogous to equine social interactions. However, the academic leaders in this field recognise that horses are capable of interspecies relationships and that they may be able to understand commonalities between the behaviours of other species and their own.<sup>44</sup>

### Ever increasing difficulty: to cause habitual reactions of frustration, anxiety, confusion, upset, anger, etc:

Mastery of demanding tasks is emphasised as providing a 'protective factor' for 'at-risk' youth.<sup>45</sup> THC participants are taught to observe horses accurately so that they experience their own progress directly. Facilitators are trained to set challenges beyond the participants comfort zone to create difficulties in the eight core skills above; before coaching to a successful outcome. The aim is that the participant can clearly measure their own success rather than rely on the facilitator's opinion or judgement. It is possible that the field of embodied or experiential learning would support this 'feedback-learning' approach, but a full literature review has not yet been done.

In addition to this, THC believes that increasing the *quality* of horsemanship enhances outcomes for participants, a view proposed in an article *EAP'd Off!*<sup>46</sup> but as yet untested academically. Building on the 'mirroring' effect, by demanding higher levels of natural horsemanship, the horse's feedback is unequivocal. THC participants are rarely allowed to use direct contact to move the horses through tasks: rather they are required to communicate with the horses using the eight core skills listed above. THC horses are chosen and trained to give clear, obvious and reliable feedback when handlers do not display these skills; yet to be highly responsive and compliant when they do.

<sup>31</sup> (O'Haire 2010, Harkrader, Burke and Owen 2004)

<sup>32</sup> (Barker and Wolen 2008, Beetz, et al. 2012)

<sup>33</sup> (Odendaal and Meintjes 2003)

<sup>34</sup> (Bachi 2013)

<sup>35</sup> (Odendaal and Meintjes 2003, Beetz, et al. 2012)

<sup>36</sup> (Burgon 2011)

<sup>37</sup> (Bowers and Macdonald 2001)

<sup>38</sup> (Rashid 2004)

<sup>39</sup> (Bizub, Joy and Davidson 2003)

<sup>40</sup> (Mayer, Roberts and Barsade 2008)

<sup>41</sup> (Pendry and Roete 2013)

<sup>42</sup> (Cushing, Williams and Kronick 1995)

<sup>43</sup> (Ewing, et al. 2007, Klontz, et al. 2007)

<sup>44</sup> (McGreevy and McLean 2010)

<sup>45</sup> (Masten, Best and Garmezy 1990)

<sup>46</sup> <http://chrisirwin.com/2010/12/eaped-off/>

**Tangible success through excellent coaching:**

A range of research has shown that experiential learning is accelerated through learning, practising and repeating skills in short, intense sessions coached to a high level.<sup>47</sup> As such, it is considered critical to achieve success in every task, and never to leave a participant rehearsing failure.

**Causal mechanisms:**

*Consolidation: The course outcomes outlined above are strengthened and consolidated through a range of other activities described in this table:*

**Course outcomes:**

- consolidate learning
- record progress
- move towards self-efficacy
- gain confidence, hope, self-esteem
- participants feel accepted in new roles, as:
  - safe / sensible / 'self-manager'
  - learner / achiever
  - carer / friend
  - partner / collaborator / team member
  - leader / parent / teacher

**Use of Comfort Zone Chart & Slider Bar Chart (right):<sup>48</sup>**

This chart was devised to help participants consider and think about their emotional state and this develops through the course. Visual mapping has been shown by multiple studies to be an effective communication tool for clarifying information and sharing meaning.<sup>49</sup>

**Reflective observation-based sessions, including an assessment of progress in all eight areas and a plan for the future:**

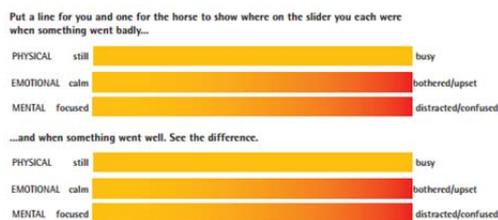
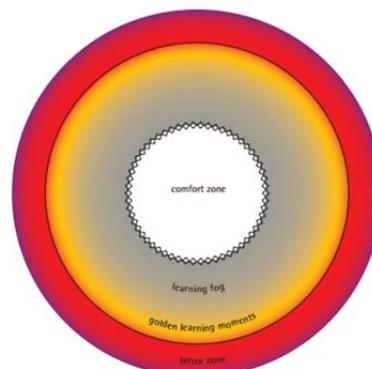
THC facilitators use the THC Star (below) to guide discussions and record progress made in the eight core skills. All marks are based on the evidence seen on the field during the sessions, not on past events, self-perceptions or self-reporting. The aim is to ensure that the record of distance travelled is accurate and realistic, and that participants leave feeling confident in their ability to manage and continue the development of positive skills and habits. The THC draws upon the "Outcomes Star" approach which is rooted in the action research tradition whereby 'assessment' is part of the 'treatment process' and participants are empowered to describe their own change.<sup>50</sup> Small scale research among organisations using the outcomes star approach, albeit conducted by the company promoting it, has described its value, particularly in terms of key working and building relationships with clients.<sup>51</sup>

The THC theory of changes also assumes that this process of reflection helps consolidate learning; although we have not been able to identify any existing evidence that supports this. However, wider research with desisters has identified that having someone believe in them is important and that desistance can be supported by interactions with others who communicate a belief that they can and will change and that they have something to offer society or others.<sup>52</sup>

**Simple language:**

Simple language such as 'calm/bothered' and 'focused/distracted' is used throughout the course to observe, at

 Put blobs to indicate the amount of time spent during the course in your comfort zone; in the fog of learning; in the golden learning moment when it all makes sense and works; and in the terror zone.



<sup>47</sup> (Raelin 2006, Ericsson 2008)  
<sup>48</sup> <http://www.thehorsecourse.org/docs/cz-sliders-2.pdf>  
<sup>49</sup> (Blankenship and Dansereau 1999)  
<sup>50</sup> (MacKeith 2011)  
<sup>51</sup> (Triangle Consulting 2008)  
<sup>52</sup> (Ministry of Justice 2013, Rex 1999, McNeill, Batchelor, et al. 2005)

first, the horses' emotions and thoughts and then the participants' and facilitators'. It is assumed that having comfortable language to describe emotions and thoughts is a first step towards managing them. This is in line with a range of studies that have highlighted the speech, language and communication difficulties faced by young people in the criminal justice system and the need for interventions to be delivered with literacy, writing, speaking and listening demands set at the right level.<sup>53</sup>

**Written feedback and copy of THC Star (right)<sup>54</sup> provided to both participant and referrer:**

It seems logical that written feedback strengthens participants' learning, as well as providing useful information for team-working. This was a claim of the Triangle Consulting research cited above, but is an area that requires more rigorous investigation.

**Completion certificates (and completion ceremony where possible), photos and DVD to share achievement:**

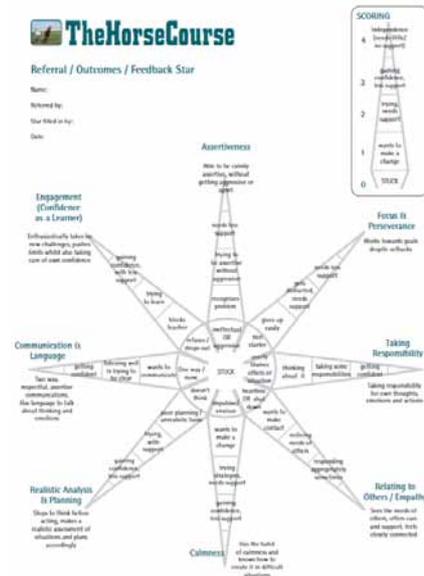
While celebratory rituals are typically absent in criminal justice settings, it has been found that where achievements are formally recognised the effects of interventions may be enhanced.<sup>55</sup> The THC theory of change also assumes that sharing success with family will foster protective relationships and strengthen changes in identity. Moreover, while the importance of family relationships to desistance is well established<sup>56</sup>, this precise causal relationship of sharing the benefits of achievements with family members has not yet been demonstrated by any empirical research that we are aware of.

**External assessment (horsemanship):**

It is assumed that external 'proof' of success enhances self-belief and confidence, although we have not been able to identify any research that supports this.

**Where possible participants return to teach a later group:**

This idea reflects a long-held tradition across various tiers of education that having to teach a subject is an effective way for people to learn. Although we have not been able to identify definitive research to support this in the context of young offenders, reviews of the descriptive literature suggest this is a reasonable assumption.<sup>57</sup>



<sup>53</sup> (NACRO 2011) p7  
<sup>54</sup> <http://www.thehorsecourse.org/docs/star-7.pdf>  
<sup>55</sup> (Ministry of Justice 2013) (Maruna and Burnett 2006).  
<sup>56</sup> (National Offender Management Service 2013)  
<sup>57</sup> (Carberry 2008)

### 3.3 What evidence is there to suggest the course outcomes should lead to the four intermediate outcomes?

Having described the intended links between activities and course outcomes above, this section describes how the course outcomes are intended to lead to the intermediate outcomes.

**Table 3.3**

<p><b>Course outcomes</b></p> <ol style="list-style-type: none"> <li>1. <b>Calmness</b></li> <li>2. <b>Assertiveness</b></li> <li>3. <b>Confidence as a learner</b></li> <li>4. <b>Focus and perseverance</b></li> <li>5. <b>Empathy</b></li> <li>6. <b>Realistic analysis and planning</b></li> <li>7. <b>Responsibility for thoughts, emotions and actions</b></li> <li>8. <b>Communication—clear and two-way</b></li> </ol>	<p><b>Intermediate outcomes:</b></p> <ul style="list-style-type: none"> <li>• <b>Changes in identity from outsider/criminal to worthwhile citizen</b></li> <li>• <b>Reduction in problem behaviour</b></li> <li>• <b>Improved relationships</b></li> <li>• <b>Better engagement with education, training and work</b></li> </ul>
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**How it happens:**

It is hoped that the learning achieved on the course will be transferred into participants' daily lives. THC relies on theories that rehearsal and success establishes learning better for some individuals than does concept-learning in a classroom. Evidence surrounding experiential learning has been presented above.

**Existing evidence to support this:**

The eight course outcomes in the theory of change were originally derived from the demands and philosophy of Parelli horsemanship. They have been correlated with offenders' needs using the OASys Manual<sup>58</sup> and link closely to the strengths and capabilities clusters identified in an influential meta-analysis of the social/emotional needs of young people.<sup>59</sup> They are also examples of 'strengths-based corrections' which focus on developing the strengths of offenders rather than emphasising or focusing on faults and are thought to be preferable to a negative focus for the formation of new identities and pro-social offender transformations.<sup>60</sup>

A brief description of each course outcome and how it contributes to intermediate outcomes are highlighted below.

**Calmness:** *"Has the habit of calmness and knows how to create it, even in difficult situations"*

This outcome reflects the widely reported observation that impulsivity or low self-control is associated with general and violent reoffending.<sup>61</sup> THC focuses on helping participants to learn the value of calmness and to practice it in a pressured situation. This may help them to feel more controlled, less aggressive and better able to stop and think during their daily lives.

**Assertiveness:** *"Able to be boundaried & assertive, without getting aggressive or upset"*

Participants in THC are taught to set boundaries and to make requests in a calm, assertive and friendly way. This is intended to discourage sudden outbursts or overly aggressive interactions. As above, this follows the literature that shows how reductions in impulsivity and increased self-control play a positive part in helping people to desist from crime.

As discussed further below in section 4.1, THC has also tested its impact on calmness and assertiveness by examining whether participation is associated with reductions in problem behaviour in the prison (a factor which has been found to be directly correlated with reductions in reoffending).<sup>62</sup>

**Confidence as a learner:** *"Enthusiastically takes on new challenges, pushes limits whilst also taking care of own confidence"*

It is a general observation that teaching is more effective if learners feel confident in their abilities to learn<sup>63</sup> and

<sup>58</sup> (HM Prison Service 2003)

<sup>59</sup> (Mcneil, Reeder and Rich 2012)

<sup>60</sup> (Maruna and LeBel 2003)

<sup>61</sup> (Ministry of Justice 2013, Farrington 2005, Moffitt 2003, Raynor 2000, Craig, et al. 2004)

<sup>62</sup> (Ministry of Justice 2014)

that young offenders often lack these attributes.<sup>64</sup> Through the learning process and the success they achieve in THC participants should feel greater confidence in their capacity and skills to learn which may in-turn lead to changes in self-perception and identity and increase their engagement with other education, training and work opportunities (both in prison and outside).

**Focus and perseverance:** *“Works towards goals despite setbacks”*

It is generally accepted that focus and perseverance are key to success in education.<sup>65</sup> THC works to achieve this and associated changes in identity by giving participants the opportunity to appreciate the benefits of personal success through working towards goals.

**Empathy:** *“Sees the needs of others, offers care and support, feels closely connected”*

Research has shown that offenders display a compromised ability to experience an empathic state which can be seen as offering a ‘protective factor’ against aggression.<sup>66</sup> THC provides offenders with a context in which they can learn how to assess and respond to the needs of others, which in-turn may contribute to improved relationships and reduced problem behaviours.

Moreover the establishment of trusting relationships through THC may compensate for an absence of trust in wider prison settings, and through the process of learning and practicing trust, lead to stronger relationships between participants and other members of the prison staff.<sup>67</sup>

**Realistic analysis and planning:** *“Stops to think before acting, makes a realistic assessment of situations and plans accordingly”*

In the ‘what works’ literature, offenders are characterised as often lacking realistic analysis, and the ability to stop and think.<sup>68</sup> THC gives offenders direct experience of the benefits in stopping when things go wrong, thinking it through and making a better plan.

**Responsibility:** *“Taking full responsibility for own thoughts, emotions and actions. Allows others to make their own choices.”*

Research evidence and practice experience tends to confirm that persistent offenders are often highly fatalistic and lack the capacity to determine the direction of their own lives. In contrast, the process of desistance is often described as an active process during which offenders acquire a sense of ‘agency’ or control over their lives.<sup>69</sup> Offenders need to discover that they are capable of this before they can deploy it.<sup>70</sup> In THC responsibility is taught by showing participants that they lose power over outcomes if they are blaming the situation, the horse or the facilitator.

**Communications:** *“Two-way, respectful, assertive communications. Has language to talk about thinking and emotions”*

It is self-evident that poor communications skills will inhibit an offender’s ability to form the relationships they will need to help them move away from crime. Many studies have highlighted the poor language skills of young offenders,<sup>71</sup> suggesting a need to improve communication skills before more conventional learning can be effective. Through participating in THC, participants both learn and practice how to communicate effectively, which may in turn improve their ability to communicate in wider settings.

<sup>63</sup> (James and Nightingale 2005, Eldred 2002)

<sup>64</sup> (Adams, Smart and Greig 2009)

<sup>65</sup> (Shechtman, et al. 2013)

<sup>66</sup> (Hastings, et al. 2000)

<sup>67</sup> (Liebling, Arnold and Straub 2011))

<sup>68</sup> (Ministry of Justice 2013)

<sup>69</sup> (S. Maruna 2001)

<sup>70</sup> (Schinkel, et al. 2009)

<sup>71</sup> (Bryan, Freer and Furlong 2007)

### 3.4 What evidence exists to suggest the intermediate outcomes should lead to the final goal of reduced offending?

Evidence that the THC's intermediate outcomes are likely to result in a reduction in reoffending comes from Learning Theory, the Ministry of Justice (MoJ) and other desistance research. These are summarised in the table below.

<b>Table 3.4</b>
<p><b>How it happens:</b></p> <p>The four intermediate outcomes THC works towards are established routes or pathways to reduced offending. It is widely regarded, and to some extent proven, that if prisoners can make progress towards these qualities they are less likely to offend again and return to prison.</p>
<p><b>Existing evidence to support this:</b></p> <p>Changes in identity from outsider/criminal to worthwhile citizen:</p> <p>It is widely accepted, and a core element of desistance theory, that offenders who do not have a criminal identity but see themselves as 'basically good people who made a mistake' are more likely to desist from crime.<sup>72</sup></p> <p><b>Reduction in problem behaviour:</b></p> <p>A range of research and analysis of the Government's Surveying Prisoner Crime Reduction (SPCR) survey suggests that offenders who are less willing to follow prison rules are also less likely to rehabilitate successfully on release.<sup>73</sup></p> <p><b>Improved relationships:</b></p> <p>The horsemanship used in THC puts great emphasis on building the relationship with the horse, and participants are gradually brought to accept the need to model the same calm, trustworthy, empathic, assertive, responsible behaviours in their human relationships. A very wide range of research highlights the importance of relationships in the process of desistance from crime.<sup>74</sup></p> <p><b>Better engagement with education, training and work:</b></p> <p>THC aims to prepare and encourage participants to engage with other interventions that may have a more direct effect on their journey to desistance, such as education programmes on communication skills, perseverance, and self-confidence linked to desistance.<sup>75</sup> It also aims to encourage prison employment which—particularly if it offers a sense of achievement, satisfaction or mastery—can support offenders to stop offending.<sup>76</sup></p>

<sup>72</sup> (Ministry of Justice 2013, Chiricos, Barrick and Bales 2007).

<sup>73</sup> (Ministry of Justice 2014, Moreau 2001, Edney 1995, Chandler 2005)

<sup>74</sup> (Ministry of Justice 2013, Laub, Nagin and Sampson 1998, Horney, Osgood and Marshall 1995).

<sup>75</sup> (Moreau 2001, Edney 1995, Chandler 2005)

<sup>76</sup> (Ministry of Justice 2013, Farrall 2002)

## 4. Contribution analysis

Having developed a theory of change, the next stage is to understand whether the actual results are consistent with predictions and expectations. We do this through a process called contribution analysis (as set out in box 2 above). In short, the theory of change identifies the changes we expect to happen, supported by existing evidence, and contribution analysis brings in an organisation's own data to evaluate results against the theory.

### 4.1 Comparing results to the theory of change

As highlighted above, aspects of the THC theory of change rely on an undeveloped evidence base, so it has been important to be as robust and thorough as possible in gathering and analysing data. Moreover, as no single evaluation approach can be used to assess the programme, evidence has been drawn from a range of sources to create an overall picture:

- **Comfort zone chart:** a simple graphic chart used mid-course to help participants visualise the learning process.
- **Slider bar:** a simple graphic chart used mid-course to help participants visualise mental and emotional states and correlate them with success.<sup>77</sup>
- **THC Star:** a tool to map progress in the eight emotional and thinking skills—used both in referral and near the end of the course, working one-to-one with the participant.<sup>78</sup>
- **THC Observational Chart:** a tool used by THC facilitators to identify different types of participant behaviour, and guide their 'readiness to learn' participant-management strategies.<sup>79</sup>
- **Case notes:** sessional notes kept by facilitators
- **Course exit interviews:** video-recorded interviews conducted by THC facilitators at the end of each course.
- **Semi-structured interviews:** qualitative feedback from participants, conducted by independent researchers.
- **Anecdotal evidence:** a range of informal feedback from observers, participants and associated agencies.
- **Participation records:** attendance, completion and achievement records of the participants.
- **Access to Offender Assessment System (OASys) scores**
- **Access to Offender Group Reconviction Scale (OGRS) statistics:** risk of reoffending in 12 months.
- **Access to P-NOMIS prison records:** offence type, pre- and post-course positive or negative entries, adjudications, re-committals.

<sup>77</sup> <http://www.thehorsecourse.org/docs/cz-sliders-2.pdf>

<sup>78</sup> <http://www.thehorsecourse.org/docs/star-6.pdf>

<sup>79</sup> <http://www.thehorsecourse.org/docs/observation-chart-5.pdf>

In the following table we assess elements of the theory of change using data from these sources. In particular, two studies are referred to throughout:

- A multi-method evaluation conducted by Professor Rosie Meek, now of Royal Holloway University.<sup>80</sup>
- Further analysis of 17 qualitative interviews, conducted by Rachel Thomas of the University of Southampton.<sup>81</sup> As this is qualitative research, where findings are reported it is important to note that not all participants interviewed said the same thing, rather we are reporting the general conclusions from the research.
- Base sizes for findings are reported in the table as (n=x), which shows the number of participants the data relates to. In all cases this is aggregated data—i.e. participants' data was collected for a set period of time, they were not cherry-picked.

### Limitations of the evidence collected

As a small charity working in a complex environment THC has to limit the amount of data it collects. This has entailed some choices about when, from whom and what information has been collected. Some of the specific limitations are:

- Analysis of reoffending data is limited to a small sample of 25 offenders in one setting, which means we should be cautious in interpreting this finding (see section 4.2). It has also meant there is no possibility to analyse outcome patterns and subgroups of service users (see section 4.3). The only counterfactual available has been OGRS predicted reoffending rates (see section 4.2). It has not been possible to conduct a randomised control trial or use the Justice Data Lab (see section 4.6)
- THC has only had limited access to data on service user's behaviour and engagement with other in-prison educational opportunities. For example it has not been possible to review data over a longer timeframe to see if intermediate outcomes are sustained (see section 4.2). Equally important, there was no comparison sample available for this analysis which means we cannot rule out other possible explanations for favourable changes such as a general reduction in problem behaviours across the institution or seasonal effects. Ideally comparative analysis would be available for these data to be fully interpretable.
- It has not been possible to do detailed interviews / assessments with all participants.
- It has not been possible to conduct detailed pre/post standardised assessments with all participants.
- It has not been possible to consult with *all* relevant stakeholders within the prison.
- This document has not completed a full peer review process. However it has been reviewed and benefited from the input of a range of academics, as highlighted in the acknowledgements section.

<sup>80</sup> <http://www.thehorsecourse.org/docs/Eval-THC.pdf>

<sup>81</sup> <http://www.thehorsecourse.org/docs/thehorsecourse-dissertation-rachel-thomas.pdf>

The evidence presented below is therefore only partial and subject to some limitations which are highlighted where relevant. However it should also be noted that all these limitations are outside of THC's control and that the organisation has done its utmost to collect the most robust data available, paying particular attention to avoiding 'cherry-picking' data. All data groups have been selected on a census basis.

Table 4.1

**Evidence about inputs / context**

The contribution analysis begins with a review of the inputs to THC and an assessment of whether the referral process was in-line with expectations.

Element of theory of change	IN PRACTICE: What results were captured?
<p><b>FACILITATOR</b></p> <p>Excellent horsemanship skills</p> <p>Knowledge and experience to select appropriate horses</p> <p>THC trained and assessed</p>	<p>Trainee facilitators are selected according to the following criteria: they must have Parelli horsemanship skills to level 4 (unridden) AND have hands-on teaching experience of horsemanship. They must be capable of modelling all eight skills from the THC Star at a high level, even in stressful situations. A background in education, mental health or social work is helpful but not essential. They will typically have 5-10 years of Parelli horsemanship study and practice.</p> <p>As at August 2014 there are seven qualified THC facilitators and eleven Trainee THC facilitators. All fulfil the above criteria, and twelve are (or have been) a licensed Parelli Professional, indicating that they have further invested in their horsemanship, teaching skills and have had hands-on experience teaching to a high standard, with external assessment by Parelli USA.</p> <p>In addition THC 'Theory training' is designed, over three days, to provide a clear theoretical grounding and to simulate the coaching approach. Understanding is assessed through a timed, written exam and the minimum pass rate is 80%.</p> <p>Trainees cannot qualify until they have also shadowed an experienced THC facilitator and passed a practical assessment whilst leading a course. The assessment process is undertaken by the founder and is currently being formalised and monitored as part of the scaling-up process.</p>
<p><b>HORSES</b></p> <p>Carefully trained and chosen to display instant, accurate and obvious responses to the eight outcomes:</p> <ul style="list-style-type: none"> <li>- negative feedback: bothered or non-compliant;</li> <li>- positive feedback: happy to perform high-level ground skill tasks at liberty or on a loose rope when participant is calm, focused and communicates clearly;</li> <li>- Safe to handle, even under some pressure.</li> </ul>	<p>THC methodology requires that horses are trained to a minimum of Parelli Level 2, preferably Level 3.</p> <p>Higher level Parelli-trained horses offer an advantage in that they will perform tasks willingly and knowledgeably from subtle cues involving focus, assertiveness, calmness, empathy and clear communication, giving course participants the opportunity to practice these more subtle skills. Working on loose ropes or at liberty further ensures that participants cannot achieve tasks through force or mere technique; instead they are obliged to achieve the eight self-management skills outlined on the THC Star. Guidance on horse selection is given during the Theory training, and horse choice is assessed as part of the THC facilitator's practical assessment.</p> <p>It is the responsibility of the facilitator to assess each of the horses on a continual basis and work with them so they remain sensitive and responsive yet safe.</p>

Table 4.1

Element of theory of change	IN PRACTICE: What results were captured?
<p>REFERRALS</p> <p>Problems in emotional and thinking skills</p> <p>Unable or unwilling to engage or gain from verbal, classroom-based interventions</p> <p>And in this cohort, PLUS</p> <ul style="list-style-type: none"> <li>• Disengaged/disruptive</li> <li>• Medium/High risk of reoffending</li> </ul>	<p>The first 20 prisoners referred to this project were targeted informally by the Offender Management Unit (prison and probation staff working on prisoners' sentence planning), to include high risk violent offenders with poor engagement in education or interventions. Thereafter, in making referrals, prison and delivery staff were strictly limited to those with medium to high risk of reoffending (50%+ in 12 months); and targeted using information taken from eight points on the OASys assessment with the criteria that they must score a minimum of 5 points, of a worst possible 16:</p> <ul style="list-style-type: none"> <li>10.1 Difficulties Coping</li> <li>10.3 Social Isolation</li> <li>10.4 Self image</li> <li>11.1 Interpersonal Skills</li> <li>11.2 Impulsivity</li> <li>11.4 Temper Control</li> <li>11.6 Problem Solving</li> <li>11.9 Understanding others' point of view</li> </ul> <p>Additionally all participants are now scored on the THC Star by the referrer, with the criteria that their total scores must be below 16, which is the middle point of the scale.</p> <p>Of the 25 referrals made since THC introduced the referral form, one lacked OASys data, three lacked Star data. The average for the remainder was a 9.4 OASys score and 10.7 star score – both well within the targeting criteria.</p> <p>A retrospective analysis of the first cohort also showed that this group largely met these criteria, despite the referral process being more informal at that time. Of these, 19 had an OGRS predicted 12 month reoffending rate score of above 50%, ranging from 52-87%. Three had OGRS scores below 50%, four had unknown OGRS scores. The average score (of those known) was 63% and index offences (usually multiple) included eleven counts of robbery, three ABH, five GBH (one using a dog), one arson, three possession of firearm, and one manslaughter.</p> <p>Finally, it is also worth noting that prisoners were referred on the basis of need, rather than volunteering (and were sometimes reluctant to take part). They were also permitted to leave the course without any negative consequences.</p>

Table 4.1

## Evidence about engagement / outcomes

The second part of the contribution analysis discusses the evidence around whether the course outcomes were achieved.

Element of theory of change	IN PRACTICE: What results were captured?
<p>Course outcomes 1:</p> <ul style="list-style-type: none"> <li>• Initial engagement and attention</li> <li>• Strong coaching relationship</li> <li>• Difficult behaviours resolve, participants become calm, willing and curious learners</li> <li>• Rapid learning</li> <li>• Active engagement with the course</li> </ul>	<p>Analysis of the initial evidence on the levels of engagement can be gathered from drop-out rates. From an initial sample of 32 prisoners, THC had a zero drop-out rate. The comfort zone chart below (course outcomes 3) looks at the participants' own experience of learning, versus staying in their comfort zone – giving further evidence of engagement during the course.</p> <p>The Thomas qualitative study of THC participants (n=17) found that participants interviews saw THC as effective learning environment that encouraged engagement and responsibility (p31-32) and that they appreciated the benefit of learning in the moment rather than through classroom work.</p> <p>In the Meek evaluation (n=17), interviewees reported that they felt able to trust the THC facilitator as a demanding but non-judgemental coach, and crucially, someone who had guided them to success where previously they had felt themselves to be 'useless' or 'stupid'.</p> <p><b>Further evidence need:</b> While retention rate and qualitative feedback are encouraging, THC could develop a more detailed way to monitor participant levels of engagement. This could include participant feedback questionnaires, validating existing tools such as the star and the observation chart, or adopting validated tools.</p>
<p>Course outcomes 2:</p> <p>Participants build eight thinking and emotional skills:</p> <ol style="list-style-type: none"> <li>1. Calmness</li> <li>2. Assertiveness</li> <li>3. Confidence as a learner</li> <li>4. Focus and perseverance</li> <li>5. Empathy</li> <li>6. Realistic analysis and planning</li> <li>7. Responsibility for thoughts, emotions and actions</li> <li>8. Communication—clear and two-way</li> </ol>	<p>Evidence for the course outcomes achieved is compiled across a number of indicative sources.</p> <p><b>The THC Star</b> was used to guide a reflective session between facilitator and participants in which they jointly recorded the level of skill demonstrated at the beginning of the course and at the end on a scale of 0 (stuck) to 4 (self-efficacy) with scores being made in half- step increments. This process is part of the course itself, aiming to reflect on and consolidate the learning that has taken place, rather than as an evaluation tool per se. However, the value of 'guided reflection' is well-established and the results are a valid contribution to the overall qualitative picture. In the initial sample of 22 prisoners, the <b>averaged results</b> were as follows:</p> <p>29% gain: calmness (from an average of 0.9 out of 5 to 2.3)            38% gain: assertiveness (from an average of 0.6 to 2.5)            35% gain: confidence as a learner (from an average of 1.3 to 3)            29% gain: focus and perseverance (from an average of 1.3 to 2.8)            35% gain: empathy (from an average of 1.3 to 3)            27% gain: analysis and planning (from an average of 1.3 to 2.6)            28% gain: responsibility (from an average of 0.8 to 2.2)            30% gain: communication (from an average of 1.2 to 2.7)</p> <p><b>The THC Observational Chart</b> enabled facilitators to record 'green' behaviours and 'amber/red' behaviours on sessional charts and case notes, with the aim that green behaviours will increase and amber/red behaviours decrease over the duration of the course. An early field observation study</p>

Table 4.1

Element of theory of change	IN PRACTICE: What results were captured?
	<p>of a small sample reports that this outcome was achieved.<sup>82</sup> Analysis of the first 19 case notes has followed this pattern with an change in behaviours from 45% green; 55% amber/red after the first session to 75% green; 25% amber/red following the final session (n=19).</p> <p>In the Meek evaluation, <b>qualitative analysis</b> of post-course semi-structured interviews with both prison staff and participants consistently reported increased calmness, attention span, planning, perseverance and confidence, and also illustrated the perceived positive impact of participation on factors such as empathy, management of emotions, self-esteem, and improved communication. (n=17)</p> <p>Similarly, the Thomas study supported the view that course outcomes were achieved (n=17). For example, the research reported that:</p> <ul style="list-style-type: none"> <li>• By learning to ‘manage’ and work with horses, participants felt they had developed greater control over aggression and an increased ability to cope with stressful situations, leading to reduced tension.</li> <li>• Developing relationships with horses had shown them the benefits of remaining calm, confident and in control even in stressful situations.</li> <li>• The experience had enabled them to increasingly take responsibility for their emotional state resulting in greater behavioral discipline.</li> <li>• For many participants, overcoming their initial fear, gaining cooperation with a large animal and achieving success in demanding activities led them to experience improved self-confidence, hope, determination and self-esteem.</li> </ul> <p><b>Further evidence need:</b> Future qualitative research with participants and prison staff should focus more explicitly on the 8 course outcomes now defined in the theory of change. This could include the development of an interview schedule based around these outcomes and a systematic process for coding case notes and observations. It would also be useful to validate the star as an evaluation tool.</p>

Element of theory of change	IN PRACTICE: What results were captured?
<p><b>Course outcomes 3:</b></p> <ul style="list-style-type: none"> <li>• consolidate learning</li> <li>• record progress</li> <li>• move towards self-efficacy</li> <li>• gain confidence, hope, and self-esteem</li> </ul>	<p>As above, evidence for the achievement of these outcomes is derived from a number of sources.</p> <p>The <b>‘Comfort Zone chart’</b> was used to help participants reflect on their learning and responsibilities and provide the facilitator with feedback on engagement and learning. From an initial sample of 18 prisoners, participants self-reported (in graphic form) that on average 60% of course time was spent learning, versus 35% in their comfort zone and 5% in ‘terror’. This chart could be a useful indicator of course integrity as the course scales up. A more formal evaluation of this type of feedback might help to compare the perceived learning value of the variety of courses on offer.</p> <p>THC also devised a <b>‘Slider bar chart’</b> to graphically demonstrate to participants the relationship between their thinking and emotions and the results they achieve. Participants reflect on a single horsemanship challenge to see the differences between an unsuccessful and a successful attempt. They score how calm or bothered and how focused or distracted/confused they and their horse were during each event, learning that being calm</p>

<sup>82</sup> (Hemingway, Meek and Elis Hill in press).

Table 4.1

Element of theory of change	IN PRACTICE: What results were captured?
	<p>and focused will yield more success than being bothered and distracted. An analysis of the first 12 prisoners' charts showed that they reported having to make on average a 60% shift to achieve success. (n=12)</p> <p>Informal reflection between the initial group of four facilitators suggests that the Comfort zone chart helps participants understand the learning process and accept their responsibilities as learner; whilst the Slider bar seemed to help participants understand that calmness and focus can be seen as a choice, not just with horses, and will lead to better outcomes in life.</p> <p>In a <b>final one-to-one reflective session</b> participants and facilitators marked before and after scores on the THC Star which formed the basis for feedback to the participant and referrer. THC has received feedback from the Parole Board, offender supervisors, mental health staff, school and PRU staff, peer mentors and participants praising the value of the tool. The Meek evaluation confirmed that participants, offender supervisors and facilitators have welcomed the Star and found it a useful tool for ongoing development and reflection. Facilitators reported that the Star session helped participants to see themselves in a new light, celebrate their achievements and gain hope for the future. In particular because they now saw the 'strengths' outlined on the Star as achievable skills of which they had direct personal experience.</p> <p><b>Video recordings</b> were made of exit interviews across four prisons with four facilitators. Recording interviews provided an opportunity for staff assessment, outcome evaluation and monitoring course integrity. As yet no formal evaluation has been made of this data source. (n=50)</p> <p><b>Further evidence need:</b> Longer-term follow up interviews with participants and staff would be useful to establish the value of these processes. Ideally this would be conducted on sufficient scale and rigour to allow some quantitative measurement of the scale of change, although this should be seen as a longer-term ambition.</p>

Table 4.1

Element of theory of change	IN PRACTICE: What results were captured?
<p>Course outcomes 4: Participants feel accepted in new roles, as:</p> <ul style="list-style-type: none"> <li>• safe / sensible / 'self-manager'</li> <li>• learner / achiever</li> <li>• carer / friend</li> <li>• partner / collaborator / team member</li> <li>• leader / parent / teacher</li> </ul>	<p>A 100% pass rate at Level 1 (n=43) reassures THC that the external assessors are finding the standard of horsemanship to be high. Other evidence comes from the two qualitative studies.</p> <p>The Meek study, reported staff's perception that following the course those referred, "presented as more confident and assertive, and better able to express their feelings, manage their emotions and have a greater ability to see the perspective of others, including their victims." It also noted that they have seen "an increased motivation to set and work towards achieving goals including engagement with prison interventions" and that the course "seems to give the prisoners the energy and belief that they can make changes" (p12)</p> <p>The Thomas study (p37-40) focussed on participants' perceptions and also found indicative evidence of some of these outcomes being achieved. For example; reports from participants that</p> <ul style="list-style-type: none"> <li>- "I'm more focussed on learning than I was before. I realised I can enjoy it"</li> <li>- "I think you've gotta have strong focus if you want them [horses] to do what you want... you've gotta show leadership"</li> <li>- "I've learnt motivation. I've never tried anything. Nothing since I was about 13"</li> </ul> <p><b>Further evidence need:</b> This evidence is promising but relatively thin. More qualitative research, including longer-term follow up interviews focused on the development of new identities would be needed to confirm the level of achievement of these factors.</p>

Table 4.1

The final part of the contribution analysis discusses the evidence around whether intermediate outcomes and long-term goals were achieved.

Element of theory of change	IN PRACTICE: What results were captured?
<p><b>Intermediate outcome 1:</b> Changes in identity from outsider/criminal to worthwhile citizen</p>	<p>As described above, both the Meek Evaluation and the Thomas study (op cit.) contain some qualitative support for this outcome being achieved: participants speak of their newfound self-esteem, ability to learn and achieve, and hope for worthwhile lives. Many reflect that the day of their offence would have been different if they had learnt the skills gained from THC before the event. However, neither study specifically comments on the concept of identity.</p> <p><b>Further evidence need:</b> As above, longer-term follow up interviews would be useful to test whether this outcome is achieved</p>
<p><b>Intermediate outcome 2:</b> Reduced problem behaviours</p>	<p>Analysis of data on behaviour reports of THC participants conducted for the Meek evaluation (p15) found a:</p> <ul style="list-style-type: none"> <li>74% statistically significant reduction (<math>p &lt; .05</math>) in adjudications, from a total of 41 to 10 (<math>n=16</math>), looking at all available data for participants. When limiting the window to 3 months pre and post these results trended in the same direction but there were not enough data points to test for statistical significance.</li> <li>72% statistically significant reduction in negative behaviour reports, from 160 to 45 (<math>n=16</math>), looking at all available data for participants. When limiting the window to 3 months pre and post these results were confirmed, with statistical significance.</li> </ul> <p>This is in line with the existing evidence that EA can reduce violence and anti-social behaviour and also that skills learned in the therapeutic environment are transferred to participants' daily lives. However, as noted in section XX, we should treat these findings with some caution because no comparison data was available for the rest of the prison population over the same timeframe.</p> <p>In the Thomas qualitative study (op cit.) participants discussed how they were able to put their behavioural and attitudinal changes into practice:</p> <ul style="list-style-type: none"> <li>- "Everyday I'm behaving, being calm. Not got into any confrontation or anything. THC has made me more relaxed" (p35)</li> <li>- "I've got better at letting it all go. Just breathe in and let it out. Think things through before you do it...You have to ignore it and move away" (p35)</li> </ul>
<p><b>Intermediate outcome 3:</b> Improved relationships</p>	<p>Analysis of behaviour reports in the Meek evaluation found an increase in positive behaviour entries, from 24 to 35 (<math>n=16</math>), which is a positive direction but not a statistically significant change. Positive entries are awarded for pro-social acts (such as helping to break up a fight, assisting an officer, assisting an injured or troubled prisoner); or for achievements in education, training or work. As such this finding provides some support for the contention that participation in THC leads to improved relationships.</p> <p>Further support comes from the qualitative studies. Self-awareness was a common theme, with participants stating that interaction with horses taught them to read body language and provided them with an insight into non-verbal communication. Most participants discussed how THC encouraged them to be more empathic. Some stated that they had an improved awareness of how their behaviour impacts others, resulting from the mirroring capacity of horses. Many participants stated that one of the main things that THC taught them was how to be patient and tolerant, serving</p>

Table 4.1

Element of theory of change	IN PRACTICE: What results were captured?
	<p>to transform individualistic, aggressive attitudes and encourage them to give people a chance. (Thomas 2013) (n=17)</p> <p><b>Further evidence need:</b> Longer-term follow up interviews would be valuable in determining whether these changes have been maintained Furthermore, access to longer-term prison data on the behaviour of course participants (before and after), ideally matched to non-participants, would greatly enhance THC's ability to quantitatively understand the scale of any change (see section 4.6).</p>
Element of theory of change	IN PRACTICE: What results were captured?
<p><b>Intermediate outcome 4:</b> Increased engagement with education, training and work</p>	<p>As described above, analysis of behaviour reports found an increase in positive behaviour entries, which includes achievements in education, training or work (although the difference was not statistically significant)</p> <p>In the qualitative studies, participants stated that THC had increased their ability to focus and stick at tasks. Another frequently cited benefit was increased confidence in their ability to learn and a greater willingness to engage with the learning process. Many of the young men discussed how their success on THC demonstrated what they were able to achieve and learn. (n=17)</p> <ul style="list-style-type: none"> <li>- "If you've done this, you're gonna do better in your Maths and English. You'll get less frustrated" (p39)</li> <li>- "I'm working on a few courses... and I'm just gonna push forward and hopefully come out with a decent CV" (p40)</li> </ul> <p><b>Further evidence need:</b> Due to the difficulties of accessing data, it has not been possible to access reliable prison records of participation in further education and work opportunities which would provide very useful quantitative data.</p>
Final goal: Reduced reoffending	<p>The current one year reoffending rate amongst THC participants post-release is 36%. This is 27 percentage points lower than the cohort's average OGRS predicted reoffending rate of 63% (n=25)<sup>83</sup>. This is a small sample size and should be treated with caution; nonetheless the difference is statistically significant at the 99% level.</p> <p>It is also noted that index offences of the cohort included:</p> <p>11 counts of robbery, three ABH, five GBH one arson, three possession of firearm, and one manslaughter;</p> <p>While reconvictions (where known) were for: witness intimidation, robbery, burglary, theft, and shoplifting. This indicates that the reoffending that had occurred was less severe. However, four of the nine offences are unknown due to the difficulty of data collection.</p> <p><b>Further evidence need:</b> Analysis needs to be repeated with larger samples, ideally using PNC rather than P-NOMIS data (see section 4.6)</p>

<sup>83</sup> This is the best counterfactual available. See section 4.6 for a further discussion.

## 4.2 Congruence: do the results match the theory?

To assess congruence we pose the four questions in the table below to interpret where a breakdown may have occurred or confirm the pattern of success. The table shows the various interpretations that may result from posing these questions.

Table 4.2: A framework for assessing congruence<sup>84</sup>

	Was the intervention adequately implemented?	Was there sufficient uptake, engagement and adherence?	Were intermediate outcomes achieved?	Were final outcomes achieved?	Interpretation
1	x	x	x	x	Implementation failure
2	✓	x	x	x	Engagement/adherence failure (first causal link)
3	✓	✓	x	x	Theory failure (early causal link)
4	✓	✓	✓	x	Theory failure (later causal link)
5	✓	✓	x	✓	Theory failure (different causal path)
6	✓	✓	✓	✓	Consistent with theory

### ***Was the intervention adequately implemented?***

There were 32 participants of THC at HMP/YOI Portland between 2010 and 2012.. There were no dropouts from the courses; and only one participant failed to complete (as he was released). We can confidently conclude that there were no issues with implementation.

### ***Was there sufficient uptake, engagement and adherence?***

The completion record indicates no issues with engagement or adherence. All participants actively engaged with the course and qualitative self-reports suggest that any initial fear or scepticism was transformed early-on into trust and respect.

In terms of course outcomes, there is self-reported evidence from the THC star and qualitative interviews that at least some progress was made by participants. In addition, course facilitators and prison staff observed changes in participants related to the eight emotional and thinking skills defined in the theory of change.

However, the mechanisms of change are not clear from the evidence collected: is it through interacting with the horse, learning to be calm, curious and willing and reflecting on the effects of behaviour as the existing EA evidence suggests? Or are other mechanisms involved? We look at this in more depth in section 4.4—looking for alternative explanations.

Overall, we conclude that the evidence around the course outcomes is encouraging but not yet entirely robust or fully understood.

<sup>84</sup> Drawn from Funnell and Rogers (2011); Purposeful Programme Theory

### ***Were intermediate outcomes achieved?***

The evidence for THC contributing to a reduction in problem behaviours comes from an analysis of formal prison data and is therefore the strongest evidence THC has.

However, the evidence is not as strong for the three other intermediate outcomes: improved relationships, changes in criminal identity and increased engagement with education, training and work. Rather, it relies on monitoring improvements in the eight thinking and emotional skills through the THC Star and qualitative self-reports. These go some way to suggest that they occur as hypothesised, but more robust research is needed to establish this with more confidence.

### ***Were final outcomes achieved?***

This section presents data on reoffending rates for the first cohort of participants compared to predicted rates, which represents the best counterfactual data available to THC at this time (see section 4.6 for discussion of other counterfactual options).

#### **How was this analysis conducted?**

THC was given access to the Prison National Offender Management Information (P-NOMIS) system from which it was able to identify whether any of the cohort had been reconvicted and returned to prison in the 12 months following their release. For the purpose of reconviction analysis P-NOMIS is not as robust as the alternative, the Police National Computer (PNC), which is used to calculate official proven reoffending rates. In particular, P-NOMIS will only typically show whether someone has returned to prison, but not whether they have been reconvicted or cautioned of a non-custodial offence. Ideally, THC would have obtained their reconviction rate from the PNC, e.g. through the Justice Data Lab, but this option is not available for a study group of this size.<sup>85</sup>

Being mindful of the weaknesses in using P-NOMIS data, THC also contacted probation officers where possible to verify the information collected about individuals. Moreover, given the severity of their original offences, THC was advised by probation officers that it is unlikely that any of the cohort would be reconvicted or cautioned without receiving a custodial sentence. In addition THC counted ALL offences as reconvictions, even where they were “non-recordable” offences (such as shoplifting and driving offences) which would not be counted as reconvictions in the official statistics.

THC has taken a sensible and stringent approach to seeking accuracy and comparability of this data and therefore we conclude that, although it has not been possible to collect data through the officially recognised approach, the reconviction rate of 36% found for this cohort is as accurate a rate as THC could identify within available resources, and given their restricted access to data.

<sup>85</sup> Increasing access to this kind of data for small organisations is an obvious area for attention for the sector as a whole.

The predicted rate used as a comparison is derived from The Offender Group Reconviction Scale (OGRS) 12 month rate. This a predictor of reoffending based on 'static risks': gender, age at first sanction, age at current sanction, age at sentence/release, number of previous sanctions and current offence group. OGRS is regarded as having good predictive validity for both general and violent reoffending and it can be used with all offenders as a universally-available, reliable and valid predictor, it is suitable for use in commissioning analysis.<sup>86</sup>

The use of OGRS to derive a control group has limitations for attribution as it does not rule out other possible factors. Unlike a Randomised Control Trial,<sup>87</sup> through which other possible influences should be distributed evenly across the treatment and control groups by the randomisation process, the OGRS approach does not allow us to eliminate other explanations. For example, differences between the THC reoffending rate and the predicted rate may be the result of an effective wider prison regime or other interventions, rather than (or as well as) the work of THC.

For the cohort in question, the predicted one-year reoffending rate based on mean OGRS scores was 63%.<sup>88</sup> The reoffending rate (as far as it can be captured through the methodology described above) was 36% - a difference of 27 percentage points.

We should be wary of the 27 point difference in actual vs predicted reoffending rates. It would be ill-advised to completely rely on these findings, as the methodology is not directly comparable to 'proven reoffending' statistics. On the other hand, effect sizes on reoffending are typically less than ten percentage points<sup>89</sup>, leaving a healthy margin for error in THC's findings.

In interpreting the reoffending rate it is important also to note that the sample size of 25 is small, just short of the minimum of 30 that MoJ would need to run analysis through the Justice Data Lab.<sup>90</sup> What the 27 percentage point difference actually means is that around 6-7 young people who were expected to reoffend did not. Although it is a small sample, this difference is a statistically significant result.<sup>91</sup>

Analysis of a small cohort leaves many questions unanswered. This data covers the outcomes from the course in one prison, with a particular cohort, particular facilitators and under a particular regime. It is not guaranteed that the results would be replicated with different facilitators, different prisons, or different horses.

Whilst the methodology is imperfect and the sample small, it remains that the best available evidence indicates that there is an association between participation in THC and the long-

<sup>86</sup> (National Offender Management Service 2012) p8

<sup>87</sup> <http://www.clinks.org/sites/default/files/UsingControlGroupApproachesToIdentifyImpact.pdf>

<sup>88</sup> Of the 25 participants of this cohort of THC participants, OGRS data is missing for four participants. OGRS scores for the remaining 21 participants have been aggregated to produce an average predicted reoffending rate of 63%.

<sup>89</sup> (Ministry of Justice 2013)

<sup>90</sup> <http://www.clinks.org/sites/default/files/MoJ%20Data%20Lab%20briefing.pdf>

<sup>91</sup> The 99% confidence interval for a finding of 36% is +25 percentage points, which means that if the course were repeated with a similar population we should expect the reoffending rate to be between 11% and 61%, which even in the worst case scenario is a two percentage point improvement on the average predicted rate of 63%. For more information about statistical significance <http://www.surveysystem.com/signif.htm>



term goal of reducing reoffending and this is sufficient to provide some additional validation of the overall theory of change.

In light of this, the lack of robust evidence for some of the causal mechanisms and intermediate outcomes in the theory of change might be seen as less important for assessing overall efficacy - though still very important if the programme is to be separately replicated.

### **Assessment of congruence**

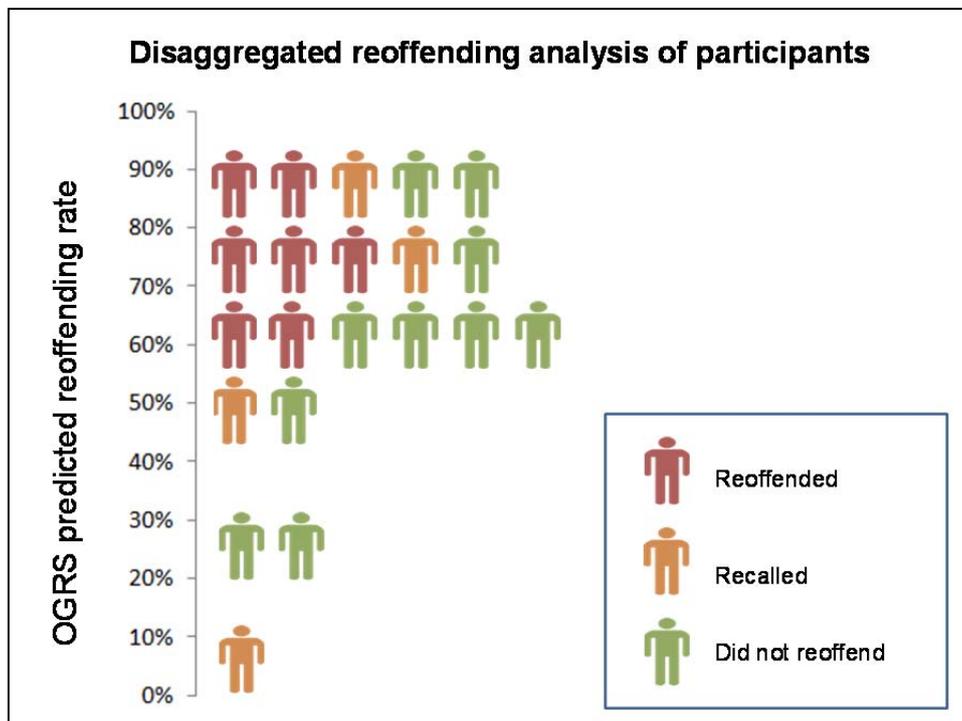
The aim of applying the four questions in table 4.2 is to assess whether the results of the intervention are congruent with the theory. We can conclude that THC has demonstrated implementation success and has indicative evidence of course outcomes being achieved. However because the evidence around some of the key intermediate outcomes is still emerging, we are unable to conclude that practice is fully congruent with the theory—we cannot rule out a different causal pathway to that theorised.

The best conclusion at this stage is therefore that THC is still in an investigatory stage—between being able to claim that results are consistent with the theory and exploring a different causal pathway to the final outcome (between rows five and six in the table).

### 4.3 Disaggregating results

As well as analysing whether total results are congruent with the theory of change, it is useful to understand the conditions under which outcomes are achieved and what might cause difference in outcomes. For example, do contextual or background factors affect outcomes? What is the relationship between course/ intermediate outcomes and long-term goals? Are some intermediate outcomes more or less important? Posing these questions and looking at outcome patterns would help us to better understand how THC works, for whom and in what circumstances?

As a starting point, the chart below shows an analysis of the final outcomes achieved (reoffending) against each individual's OGRS score (for the cohort of 21 course participants where OGRS scores were available). It shows that predicted reoffending ranged from 7% to 87% with 18 participants scoring over 50% (medium to high risk) and three participants scoring 7%, 23% & 25% (very low to low risk).



The sample size is too small for statistical analysis at different levels of predicted reoffending. However, we can see that of the three prisoners with a lower risk of reoffending (below 50%), two have not reoffended and one has been recalled. Of the 18 with scores of 50% or above, seven have reoffended, three have been recalled and eight have not reoffended. If we exclude the three below 50%, the average probability of reoffending for the higher risk group is 70%, while the actual reoffending rate was 39% - a fairly encouraging indication that THC is effective for people at high risk of reoffending. Although these results are impressive, the small sample size means we should read with caution until more data is available.

There is limited scope to develop this kind of analysis from the data that THC has collected to date but it should be a key part of the future evidence strategy. Understanding how outcomes differ for different types of service user and different levels of engagement is a key part of understanding how a project works and how it can be improved and transferred to other settings.

#### 4.4 Consider other explanations

The central causal mechanism of THC is that changes in behaviour, attitudes and skills are caused through working on horsemanship tasks and interaction with and feedback from both horse and facilitator. While this is supported by the EA research highlighted in table 3.2, and by THC's own data on course outcomes, it is also possible that other factors play a role. For example:

- The intense nature of the programme with almost one-on-one support may be a contributing factor in terms of building relationships and receiving focussed attention;
- Being outdoors may have a calming effect. Another potential influence is the weather. The time of year being outdoors may make a difference
- The effect of participation in a novel experiment may have a diffuse influence on many of those involved and
- Being selected for the course may help some users to feel 'special' and thereby contribute to changes in self-image (a placebo affect).

At this stage of THC's development and evaluation there is no hard data to help us assess the importance of these factors but this may emerge in time. Further studies would be needed to establish beyond doubt any claim that the interactive elements of THC were the "active element" in change.

#### 4.5 Asking participants and facilitators

Another way to better understand the mechanisms that have caused change in participants is to ask them directly about their experience and how it has contributed to change. As described above, THC has been the subject of a qualitative study involving interviews with participants and prison staff.<sup>92</sup> Findings from this study are reported in table 4.1 above and appear to support the idea that THC was well-delivered and engaging for participants, and that progress was made across the eight course outcomes.

We need to be somewhat cautious in interpreting this information because participants in qualitative research tend to talk favourably about projects they have enjoyed, and there have been no long-term follow-up interviews which would enable participants to reflect further on the role and significance of THC.

Nonetheless, the best evidence we have does indicate that from participants' perspectives the theory of change is valid.

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<sup>92</sup> (R. Thomas 2013)

#### 4.6 Making counterfactual comparisons

Given the importance of counterfactual comparisons to many evidence hierarchies,<sup>93</sup> it is important to consider how THC could answer the counterfactual question: What would have been the likely outcome for these participants if the course had not taken place?

The OGRS analysis discussed in section 4.2 represents one form of counterfactual analysis through comparison to predicted reoffending rates, but other options are also feasible.

Given a larger sample size (at least 30 PNC-matched participants) THC could create a comparison group using the Justice Data Lab,<sup>94</sup> which would identify a comparison group from the Police National Computer (PNC). However, due to the release dates of participants, this will not be possible until 2015 at the earliest. Another, more expensive (but less robust) option would be to generate a retrospectively selected matched sample, but this would require an academic application through the NOMS National Research Committee.

A randomised control trial is theoretically possible;<sup>95</sup> a larger group of potential participants could be selected and subject to random assignment into treatment and control groups. The challenge to this is that THC currently works with too few people for this to be viable (although the effect size seen to date suggests that this may not be a problem). Another difficulty would be the ethical issues associated with denying people a service, which in a small prison could have a demotivating or alienating effect on the control group. This could be resolved through a 'waiting list' design in which everyone receives the project eventually. However this would mean that comparisons between treatment and control group could only be made for intermediate outcomes rather than reconviction (because by the time they leave prison everyone will have received the course). Despite these challenges, the suggestion is that as THC grows it should start to seriously consider conducting this type of study.

Comparisons of participants' degree of change before and after THC could be strengthened by adding more data points (i.e. going further back and forward in time to put THC's work in a longer-term context of change for individuals). At present, THC Star is used to compare participants' behaviours at the beginning of the course and at the end. This is a short period of time and may not capture the longevity or significance of any changes. Similarly, rather than the star THC could use repeated psychometric self-reporting batteries, which are the most commonly used measure in Offending Behaviour Programmes. However these would carry a risk of over-burdening participants and facilitators (as well as damaging the relationships between them). Also, the value of written self-assessment tools may be questionable for the THC group, many of whom have literacy and communication problems.

A related option would be to track in-prison behaviour reports for longer periods than was possible in the analysis in table 4.1. The challenge here is that data is hard to get from the prison on an ongoing basis. Following NOMS's recent acknowledgement of the predictive

<sup>93</sup> Please see our guidance on standards of evidence: <http://www.clinks.org/sites/default/files/StandardsofEvidenceGuide.pdf>

<sup>94</sup> <http://www.clinks.org/sites/default/files/MoJ%20Data%20Lab%20briefing.pdf>

<sup>95</sup> For more information see <http://www.clinks.org/sites/default/files/UsingControlGroupApproachesToIdentifyImpact.pdf>

value of in-prison behaviour to reoffending,<sup>96</sup> charities like THC would welcome increased access to this data from prisons and NOMS / MoJ.

Having considered the different options above; we conclude that given its current scale, THC has explored the possible options for conducting a counterfactual study to the full. However more powerful analysis will be possible as the programme grows, so it will be important to remain focussed on identifying opportunities to collect this kind of evidence and be prepared to invest if necessary (as well as working to secure further access to prison data).

#### 4.7 Analysis of costs and benefits

Discussion of the cost of a service is an essential element of any evaluation. There are many ways to approach a cost-benefit analysis, in this document we will only present a very simplistic calculation<sup>97</sup>.

THC costs c. £1000<sup>98</sup> per participant to run in custody and less in the community. This compares with an overhead of £2,000 to run Thinking Skills Programme, the most comparable offender behavioural programme in terms of referral criteria.<sup>99</sup>

The direct annual cost per year for each prisoner held in a Young Offender Institution (under 21 years of age) is £30,755.<sup>100</sup> This is the best figure we have to calculate the potential cost savings of THC but it is also important to stress two important caveats:

- On the one hand it is a conservative cost of reoffending since it only reflects the cost of imprisonment, and does not include the social and actual cost of criminal offences.<sup>101</sup>
- On the other hand it is an overestimate, since the majority of costs in the prison system are 'fixed' (premises and employment contracts) so the marginal cost of keeping someone out of prison are likely to be much lower.

Notwithstanding this, using this cost data that is available and the range of percentage point reductions hypothesised from the analysis above, we can estimate that THC saves between £0.62 and £16 for every £1 spent, with an estimate of £8.30 per pound spent for a mid-point estimate of a reduction in reconviction rates of 27 percentage points. This has been calculated in the following way:

- Predicted reoffending rate (OGRS) = 63%, or a cost of £19,376
- THC reoffending rate = 36%, or a cost of £11,072
- Saving of £8,304. So for each pound spent an estimated saving of £8.30.

<sup>96</sup> (Ministry of Justice 2013)

<sup>97</sup> For further information on more complex methodologies, see <http://www.thinknpc.org/publications/economic-analysis/>

<sup>98</sup> It has been established that THC can be delivered by different people at different locations within the same cost.

<sup>99</sup> (Ministry of Justice 2010).

<sup>100</sup> (Ministry of Justice 2011)

<sup>101</sup> (Meek 2012)

It should be stressed that this analysis is entirely hypothetical because it is based on the reconviction analysis of a small cohort (n=25) participants. However, we feel it is useful to include as it illustrates the kind of analysis THC would be able to do when larger samples are available.

The question should also be asked, if this intervention is successful, can it be scaled up and rolled out? TheHorseCourse has successfully replicated the intervention in four prisons with four different facilitators. THC concludes that it will not be practical to run the course in typical town prisons where open space is at a premium, nor in high security establishments where ropes may present a security risk too far. However, there are numerous prisons where the intervention would be both appropriate and practical. It has also been trialled in the community, working with young people at risk of offending and young people either excluded or at risk of exclusion from school for a multitude of reasons, who are referred on the basis of disengagement or lack of progress with conventional talk-based options such as counselling, therapy or in-school interventions. THC plans to work with ex-offenders immediately beyond the gate and with more agencies involved in diversion from crime. It is to be noted that THC has found it possible to deliver courses more cheaply in the community because of the scheduling and logistical constraints of working within the prison regime.

#### **4.8 What has been learned?**

Evaluation should be as much about learning and improving as demonstrating impact. A few key learning points are outlined below:

- It may have helped to think about and articulate the theory of change at an earlier stage of designing the Restart programme. This was not done systematically at the beginning (the theory of change has only been developed quite recently). The best approach would have been to develop a preliminary theory of change at the outset and to continue to revisit it as the course was refined. As an intervention moves into its replication stage, this clarity of process becomes critical.
- When developing an innovative intervention, it is useful to engage and test ideas with academics and practitioners from a broad range of disciplines. THC has had very helpful input from people in the fields of criminal justice, education, learning theory, public health, mental health services, psychology, equine-assisted practice and social services.
- As a result of feedback from participants, THC reduced the overall length of the programme in prisons while increasing its intensity (i.e. more sessions over a shorter period). The ideal intensity for the course, across different target groups, is still the subject of experimentation and monitoring.
- When trying something new and untested it is valuable to work with a broad range of participants to discover for whom the intervention is most useful. However, the requirement to measure impact drives a narrowing of target groups so that results are more precise and intelligible. For instance, THC suspects that outcomes are particularly strong for 'Imprisonment for Public Protection' (IPP) prisoners but has not been able to deliver the programme to sufficient number of these to test this.



- THC has learned that it is sometimes better to develop your own evaluation approaches than try to use off-the-shelf tools. Existing tools bring benefits such as predictive reliability, validity, credibility and potential for consistent measures across interventions and services yet may not 'fit' the intervention. Home-made tools have the advantage of a perfect fit, but have to be tested and proven, which is time consuming and expensive. THC chose the latter route, developing the THC Star some way into the project in response to early evaluation findings. The THC Star serves partly to communicate soft outcomes to referrers and stakeholders, but mainly for engaging with participants directly around key course outcomes. Early indications show it to be effective at reinforcing the process without overburdening or alienating participants or facilitators. Moreover, referrers and stakeholders have welcomed its clarity. Work is now underway to validate the THC Star as a monitoring tool.
- Bringing innovation to large, bureaucratic institutions is not easy. A consistent, transparent and collaborative approach from NOMS, the Prison Service and MoJ would greatly enhance the ability of voluntary organisations to help rehabilitate offenders.

## 5. Conclusions: judging the project

This document has articulated the theory of change for THC and the evidence that exists to support it. Through contribution analysis, we have also begun to assess whether THC has been delivered effectively and whether outcomes match the programme theory. In other words, we have tested both programme design and efficacy.

The conclusion is that THC has been effectively delivered and there is encouraging evidence that outcomes have been achieved, although the small cohort means we should interpret results with care, and alternative explanations cannot be ruled out. Indeed, it may seem extraordinary that 14 hours of interacting with a horse will change the offending trajectory of a persistent young offender. However, it should also be noted that that 6-7 hours of CBT is seen as effective in primary mental health care so impacts from this scale of work are not unknown.

THC operates in criminal justice, education and mental health settings and relies on charitable funding to support its innovation. Each sector and even each body within a sector may have a different set of criteria by which they measure success. The aim of a good theory of change and contribution analysis is to provide the basic information needed to assess the programme under any or all of the criteria.

Within criminal justice commissioning a key commissioner is the National Offender Management Service (NOMS), whose approach to applying evidence to potential programmes is described in the table below:

Good	One or more high-quality study that shows a direct relationship between the intervention and a reduction in binary and/or frequency of reoffending.
Mixed/promising	<p>Where either the quality of studies or their findings vary so that it is difficult to find consensus regarding effectiveness.</p> <p>Where there is a strong theory of change underpinning the intervention, and (good quality) process evaluation has identified positive findings regarding implementation.</p> <p>Where there is strong evidence of success in tackling intermediate outcomes, and these outcomes have been shown to be linked to reoffending or desistance.</p> <p>Where there are multiple studies of lower quality that point in the same positive direction of travel.</p>
Insufficient evidence to determine impacts on reoffending	<p>Some attempt has been made to evaluate approaches or interventions but this is of unknown or low quality, such that it is difficult to identify impacts.</p> <p>Where no evaluation has been found on the approaches or interventions.</p>

NOMS has also stated that it welcomes innovative approaches that are less tried and tested, but that they should still be grounded in a credible theoretical model of change.<sup>102</sup>

On the basis of the evidence presented here we believe that THC can be classified as a mixed/promising intervention.

Another way of looking at the standard of evidence is through the Social Research Unit / NESTA Standards of Evidence,<sup>103</sup> which provide a framework that brings products and services in line with academically-recognised levels of evidence, at a pace and approach which is appropriate to innovation. These are summarised below:



Our conclusion is that THC has attained level 2.

There is already evidence that could be regarded as Level 3, but this will be improved once the 12-month released cohort is large enough to qualify for analysis by the MoJ's Justice Data Lab and / or examined through other counterfactual approaches.

Finally, THC is also setting itself up to achieve levels 4 and 5, although this is some way off for now.

<sup>102</sup> (National Offender Management Service 2012)

<sup>103</sup> <http://www.nesta.org.uk/publications/nesta-standards-evidence>

## 6. Recommendations for further research

Throughout the document we highlight questions that could be addressed through further research, this section brings these together.

- THC's analysis of reoffending needs to be repeated with larger samples, ideally using PNC rather than P-NOMIS data. THC will use the Justice Data Lab as soon as they have the required sample size.
- More data is needed around three of the four intermediate outcomes: improved relationships, changes in identity and increased engagement with education, training and work. For example, THC needs access to longer-term prison data on the behaviour of course participants (before and after) and participation in further education and work opportunities. Ideally this would be matched to data on non-participants, to quantitatively understand the scale of any change.
- Longer-term follow up interviews would be valuable in determining whether changes are maintained, for example whether new identities are sustained.
- Future qualitative research with participants and staff should focus more explicitly on the 8 course outcomes now defined in the theory of change. This could include the development of an interview schedule based around these outcomes and a systematic process for coding case notes and observations.
- Larger study groups would be useful to test and potentially validate the THC star as a predictive tool.
- Simple isolated experiments (e.g. using film clips) could be conducted to test and potentially validate the THC observation chart as a reliable observational tool. Further neurophysiological experiments could be employed to test the suggested links between physical observations and emotional responses.
- Effort needs to be invested in understanding whether engagement and outcomes differ for different types of service user.
- While retention rate and qualitative feedback are encouraging, THC could develop a more detailed way to monitor participant levels of engagement. This could include participant feedback questionnaires, validating existing tools such as the star and the observation chart, or adopting validated tools.

Particular aspects of the theory of change that would benefit from further examination are:

- Whether the THC/Parelli behaviour modification approaches can be validated in horses and in humans? Including, whether behavioural techniques can be used to train emotional responses?
- Whether feedback from horses is seen by participants as more acceptable than feedback from other sources.
- Whether Parelli-trained horses offer significant advantage in this field?
- Whether increasing the quality of horsemanship enhances outcomes for participants?
- Whether the THC coaching style and immersive schedule offer significant advantage?
- Whether sharing achievements with family members promotes longer term change.

## Bibliography

- Adams, Eddy, David Smart, and Christine Greig. *YOUNG OFFENDER LEARNING AND SKILLS WORKSTREAM REPORT*. Scottish Government, 2009.
- Andrews, D A, I Zinger, I, R D Hoge, and J Bonta. "Does correctional treatment work? A psychologically informed meta-analysis." *Criminology*, 28, 1990: 369-404.
- Barker, S B, and A R Wolen. "The benefits of human-companion animal interaction: a review." *Journal of Veterinary Medical Education*, 35(4), 2008: 487–95.
- Beetz, A, Kerstin Uvnäs-Moberg, Henri Julius, and Kurt Kotrschal. "Psychosocial and Psychophysiological Effects of Human-Animal Interactions: The Possible Role of Oxytocin." *Front Psychol*, 2012.
- Bizub, A, A Joy, and L Davidson. "'It's like being in another world': Demonstrating the Benefits of Therapeutic Horseback Riding for Individuals with Psychiatric Disability." *Psychiatric Rehabilitation Journal*, 26, 2003: 377-384.
- Blankenship, J, and D F Dansereau. "Cognitive enhancements of readiness for corrections-based treatment for drug abuse." *The Prison Journal*, 79(4), 1999: 431-445.
- Bowers, M, and P Macdonald. "The Effectiveness of Equine-Facilitated Psychotherapy with At-Risk Adolescents." *Journal of Psychology and Behavioural Sciences*, 15, 2001: 62-76.
- Bryan, Karen, Jackie Freer, and Cheryl Furlong. "Language and communication difficulties in juvenile offenders." *International Journal of Language & Communication Disorders*, Volume 42, Issue 5, 2007: 505–520.
- Burgon, H. "Queen of the World: Experiences of 'at-risk' young people participating in equine-assisted learning/therapy." *Journal of Social Work Practice*, 25 (2), 2011: 165-183.
- Carberry, A. *Learning-by-teaching as a pedagogical approach and its implications on engineering education*. [http://dl.tufts.edu/file\\_assets/tufts:UA071.001.001.00011.00002](http://dl.tufts.edu/file_assets/tufts:UA071.001.001.00011.00002), TUFTS UNIVERSITY, 2008.
- Carter, and Hemmingway. "Neuro/physiology pilot study." forthcoming.
- Chandler, C K. *Animal Assisted Therapy in Counselling*. New York: Routledge, 2005.
- Chiricos, Barrick, and Bales. "The labelling of convicted felons and its consequences for recidivism." *Criminology*, 45(3), 2007: 547-81.
- Coyle, D. *The Talent Code*. Arrow, 2010.
- Craig, L, k Browne, A Beech, and I Stringer. "Personality characteristics associated with reconviction in sexual and violent offenders." *The Journal of Forensic Psychiatry & Psychology*, Vol 15 No 3, 2004.
- Crossan, B, J Field, J Gallacher, and B Merrill. "Understanding participation in learning for non-traditional adult learners: learning careers and the construction of learner identities." *British Journal of Sociology of Education* 24(1), 2003: 55-67.
- Cushing, Judy, James Williams, and Robert Kronick. "THE WILD MUSTANG PROGRAM: A CASE STUDY IN FACILITATED INMATE THERAPY." *Journal of Offender Rehabilitation*, 22, 1995.
- Damasio, A R. *Self comes to mind: Constructing the conscious brain*. London: Vintage Books, 2012.
- Damasio, A, and G B Carvalho. "The nature of feelings: evolutionary and neurobiological origins." *Nature Reviews: Neuroscience*, 14, 2, 2013: 143-152.
- Edney, A T. "Companion Animals and Human Health: An Overview." *Journal of the Royal Society of Medicine*, 88(12), 1995: 704-708.
- Eldred, J. *Moving on with Confidence – Perceptions of success in Teaching and Learning in Adult Literacy*. NIACE, 2002.
- Ericsson, A. "Deliberate Practice and acquisition of expert performance." *CADEMIC EMERGENCY MEDICINE*. 15, 2008: 988–994.

- Ewing, C, P MacDonald, M Taylor, and J Bowers. "Equine-Facilitated Learning for Youths with Severe Emotional Disorders: A Quantitative and Qualitative Study." *Child Youth Care Forum*, 36, 2007: 59-72.
- Farrall. *Rethinking What Works with Offenders*. Cullompton, UK: Willan Press, 2002.
- Farrington. "The integrated Cognitive Antisocial Potential (ICAP) Theory." In *Integrated Development and Life-course Theories of Offending*, by Farrington, 73-92. New Brunswick, NJ: Transaction, 2005.
- Frewin, K, and B Gardiner. "New Age or Old Sage: A Review of Equine Assisted Psychotherapy." *The Australian Journal of Counselling Psychology*, 6, 2005: 13-17.
- Grandin, Temple. *Animals in Translation: Using the Mysteries of Autism to Decode Animal Behavior*. New York: Scribner, 2005.
- Harkrader, T, T W Burke, and S S Owen. "Pound puppies: The rehabilitative use of dogs in correctional facilities." *Corrections Today* 66(2), 2004: 74-79.
- Hastings, Zahn-Waxler, Robinson, Usher, and Bridges. "The development of concern for others in children with." *Developmental Psychology* 36, 2000: 531-546.
- Hemingway, A, R Meek, and C Ellis Hill. "An Exploration of an Equine Facilitated Learning Intervention with Young Offenders." *Society & Animals* 2014, in press.
- HM Prison Service. 2003.  
[http://www.justice.gov.uk/downloads/offenders/psipso/ps0/PSO\\_2205\\_offender\\_assessment\\_and\\_sentence\\_management.doc](http://www.justice.gov.uk/downloads/offenders/psipso/ps0/PSO_2205_offender_assessment_and_sentence_management.doc) (accessed May 22, 2014).
- Horney, Osgood, and Marshall. "Criminal careers in the short-term: Intra-individual variability in crime and its relation to local life circumstances." *American Sociological Review*, 60, 1995: 655-673.
- Hurry, J, L Brazier, and A Wilson. "Improving the literacy and numeracy of young offenders." In *Tracking adult literacy and numeracy skills: findings from longitudinal research*, by S Reder and J Brynner. New York: Routledge, 2009.
- Hurry, J, L Brazier, K Snapes, and A Wilson. *Improving the literacy and numeracy of disaffected young people in custody and in the community*. London: NRDC, 2005.
- James, Kathryn, and Christine Nightingale. "Self-esteem, confidence and adult learning." 2005.  
<http://www.niace.org.uk/Research/HDE/Documents/Self-esteem-confidence.pdf>.
- Kaiser L. Spence L., Lavergne A. and Bosch K., Lana Kaiser, Linda J Spence, Annique G Lavergne, and Kerrie L Vanden Bosch. "Can a Week of Therapeutic Riding make a Difference? A pilot study." *Anthrozoos: A Multidisciplinary Journal of The Interactions of People and Animals*, 17 (1), 2004: 63-71.
- Kaiser, L, K Smith, C Heleski, and L Spence. "Effects of a therapeutic riding program on at-risk and special educational children." *Journal of American Medical Association*, 228(1), 2006: 46-52.
- Karol, Jane. "Applying a Traditional Individual Psychotherapy Model to Equine-facilitated Psychotherapy (EFP): Theory and Method." *Clinical Child Psychology and Psychiatry*, 12, 2007: 77-90.
- Klontz, B, A Bivens, D Leinhart, and T Klontz. "The Effectiveness of Equine-Assisted Experiential Therapy: Results of an Open Clinical Trial." *Society and Animals*, 15, 2007: 257-267.
- Laub, Nagin, and Sampson. "Trajectories of change in criminal offending: Good marriages and the desistance process." *American Sociological Review*, 63, 1998: 225-238.
- Liebling, A, Helen Arnold, and C Straub. *An exploration of staff – prisoner relationships at HMP Whitemoor: 12 years on*. Ministry of Justice, 2011.
- Lipsey, Mark, Nana Landenberger, and Sandra Wilson. *Effects of Cognitive-Behavioral Programs*. <http://www.campbellcollaboration.org/lib/download/143/>, Nashville: Center for Evaluation Research and Methodology Vanderbilt Institute for Public Policy Studies, 2007.
- MacKeith, Joy . *The Development of the Outcomes Star: A Participatory Approach to Assessment and Outcome Measurement*. <http://www.outcomesstar.org.uk/storage/outcomes-star->

- library/articles/Development-of-Outcomes-Star-in-Housing-Care-and-Support.doc, Triangle Consulting Social Enterprise, 2011.
- MacLean, P D. *The triune brain in evolution: Role in paleocerebral functions*. New York: Plenum, 1990.
- Maruna, and Burnett. "The Kindness of Prisoners: Strength-based Resettlement in Theory and in Action." *Criminology and Criminal Justice*, 6, 2006: 83-106.
- Maruna, Shadd. *Making Good: How Ex-convicts Reform and Rebuild Their Lives*. Washington DC: American Psychological Association, 2001.
- Maruna, Shadd, and Thomas P LeBel. "Welcome Home? Examining the "Reentry Court" Concept from a Strengths-based Perspective." *Western Criminology Review*. 4(2): , 2003: 91-107.
- Masten, A, K Best, and N Garmezy. "Contributions from the study of children who overcome adversity." *Development and Psychopathology* 2, 1990: 425–444.
- Mayer, R, R D Roberts, and S G Barsade. "Human abilities: Emotional intelligence." *Annu Rev Psychol*, 59, 2008: 507–536.
- McGivney, V. *Fixing or Changing the Pattern? Reflections on widening adult participation in learning*. Leicester: NIACE, 2001.
- Mcneil, Bethia, Neil Reeder, and Julia Rich. *A framework of outcomes for young people*. The Young Foundation, 2012.
- McNeill, F, and B Weaver. *Changing Lives? Desistance Research and Offender Management*. Glasgow: Scottish Centre for Crime and Justice Research, 2010.
- McNeill, F, S Batchelor, R Burnett, and J Knox. *21st Century Social Work. Reducing Reoffending: Key Practice Skills*. Edinburgh: The Scottish Executive, 2005.
- McNeill, Fergus, Kirstin Anderson, Sarah Colvin, Katie Overy, Richard Sparks, and Lyn Tett. "Inspiring Desistance? Arts projects and 'what works?'" *Justitiele verkenningen* 37(5), 2011: 80-101.
- Meek, R. "Interim Evaluation Findings, TheHorseCourse at HMP / YOI Portland." 2012.
- Ministry of Justice . "Do Cognitive Skills Programmes Work with Offenders? ." 2010.  
<http://www.swmprobation.gov.uk/wp-content/uploads/2010/06/What-works-Cognitive-skills.pdf> (accessed May 22nd, 2014).
- Ministry of Justice. *Analysis of the impact of employment on re-offending following release from custody, using Propensity Score Matching*. London: Ministry of Justice, 2013.
- Ministry of Justice. *Costs per place and costs per prisoner by individual prison*.  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/218347/prison-costs-summary-10-11.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/218347/prison-costs-summary-10-11.pdf), Ministry of Justice, 2011.
- Ministry of Justice. *Evaluation of the impact of the HM Prison Service Enhanced Thinking Skills programme on reoffending*. Ministry of Justice, 2010.
- Ministry of Justice. *Outcomes of the Surveying Prisoner Crime Reduction (SPCR) sample*. London: Ministry of Justice, 2014.
- Ministry of Justice. *The factors associated with proven re-offending following release from prison: findings from Waves 1 to 3 of SPCR*. Ministry of Justice, 2013.
- Ministry of Justice. *Transforming Rehabilitation: a summary of evidence on reducing reoffending*. Ministry of Justice, 2013.
- Moffit. "Life-Course-Persistent and Adolescence-Limited Antisocial Behaviour: A 10-year Research Review and a Research Agenda." In *Causes of Conduct Disorder and Juvenile Delinquency*, by Moffitt & Caspi Lahey. New York: Guildford, 2003.
- Moreau, L. "Outlaw Riders: Equine-facilitated therapy with juvenile capital offenders', Reaching Today's Youth." *The Community Circle of Caring Journal*, 5(2), 2001: 27-30.
- Morgan, Mark, and Mary Kett. *The Prison Adult Literacy Sruvey: Results and Implication*. Irish Prison Service, 2003.
- Muth, W.R. *Intergenerational literacy programme for incarcerated parents and their families: a review of the literature*. Virginia: Virginia Commonwealth University, 2006.

- NACRO. "Speech, language and communication difficulties: Young people in trouble with the law." <http://www.nacro.org.uk/data/files/speech-language-communications-954.pdf>, 2011.
- National Offender Management Service. "Intermediate outcomes of family and intimate relationship interventions: a rapid evidence review." <http://www.icpr.org.uk/media/36296/Intermediate-outcomes-of-family-and-intimate-relationship-interventions.pdf>, 2013.
- National Offender Management Service. *NOMS Evidence and Segmentation: Companion document to NOMS Commissioning Intentions from 2014*. London, 2014.
- O'Haire, M. "Companion animals and human health: Benefits, challenges, and the road ahead." *Journal of Veterinary Behavior: Clinical Applications and Research* 5(5), 2010: 226-234.
- Odendaal, J S, and R A Meintjes. "Neurophysiological correlates of affiliative behaviour between humans and dogs." *Vet J*, 2003.
- Pendry, Patricia, and Stephanie Roete. "Experimental Trial Demonstrates Positive Effects of Equine Facilitated Learning on Child Social Competence." *Human-Animal Interaction Bulletin, Vol. 1, No. 1, , 2013: 1-19*.
- Raelin, J. "Developmental action learning: Toward collaborative change. Action Learning:." *Research & Practice*, 3,, 2006: 45-67.
- Rashid. *Horses Never Lie: The Heart of Passive Leadership*. Newton Abbot, Devon: David & Charles, 2004.
- Rashid, M. *Horses Never Lie: The Heart of Passive Leadership*. Newton Abbot, Devon: David & Charles, 2004.
- Raynor, Kynch, Roberts & Merrington. "Risk and need assessment in probation services: an evaluation." Home Office Research Study 211, 2000.
- Rex. "Desistance from Offending: Experiences of Probation ." *Howard Journal of Criminal Justice*, 36(4), 1999: 366–83.
- Sadlier. "Evaluation of the impact of the HM Prison Service Enhanced Thinking Skills programme on reoffending." 2010.
- Schinkel, Jardine, Curran, and Whyte. *Routes out of Prison – evaluation report*. Edinburgh: CJSWDC, 2009.
- Shechtman, Nicole, Angela H DeBarger, Carolyn Dornsife, Soren Rosier, and Louise Yarnal. *Promoting Grit, Tenacity, and Perseverance: Critical Factors for Success in the 21st Century*. <http://pgbovine.net/OET-Draft-Grit-Report-2-17-13.pdf>, U.S. Department of Education Office of Educational Technology, 2013.
- Thomas, R. "Using 'Equine-Assisted Therapy' to Aid the Rehabilitation of Young Offenders: An Evaluative Case Study of 'TheHorseCourse'." 2013. <http://www.thehorsecourse.org/docs/thehorsecourse-dissertation-rachel-thomas.pdf>.
- Tramutt, J. *Opening the Gate: Cultivating Self-Awareness and Self-Acceptance through Equine Facilitated Psychotherapy*. Unpublished master's thesis, Naropa University, 2003.
- Triangle Consulting. "Using the Outcomes Star: Impact and good practice." [http://www.outcomesstar.org.uk/storage/OutcomesStar\\_Impactandgoodpractice.pdf](http://www.outcomesstar.org.uk/storage/OutcomesStar_Impactandgoodpractice.pdf), 2008.
- Vidrine, N, P Owen-Smith, and P Faulkner. "Equine-Facilitated Group Psychotherapy: applications for therapeutic vaulting." *Issues in Mental Health Nursing*, 23(6), 2002: 587-603.



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