Esteem Synergism

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Jim Steinmeyer is an internationally respected designer of magical illusions and special effects, whose creations include Walking Through a Mirror, Walking Through a Rotating Blade, and an effect made famous by David Copperfield as The Vanishing Statue of Liberty.

Steinmeyer is also the inventor of two of the best self-working card tricks of recent times, and with his permission, we survey these below, in our own words, before considering some variations and presentational options. We recommend that interested readers consult his published versions for their original incarnations.

Both tricks involve spelling; the first uses a card's identity (actually just its numerical value) to guarantee a positional outcome which is completely independent of the cards(s) initially used, whereas the second uses card suits in a packet of four face-up cards to force a final outcome which seems not to depend on an initial randomization process.

Revolution 9

We first learnt this wonderful trick as "Nine-Card Spell" from (Mental Magic, Sterling, 1999), a volume for children by Martin Gardner. Steinmeyer published this as "Nine Card Speller" in MAGIC Magazine (May 1993), and later in his own booklet Impuzzibilities (J.H.S. Publications, 2002).

Have a spectator select any nine cards from the deck, setting the rest aside. This packet of nine is shuffled freely while you turn away. Ask the spectator to note and show around the third card down from the top, then replace it in that position. Now you direct a silent "spelling out and dropping" of the card's name (e.g., "Five of Spades"), one word at a time. For each word, one card is counted out to the table for each letter, then the remainder of the packet of nine is dropped on top. Finally you turn back, take the cards, place them behind your back and after some concentration, successfully bring forward the noted card, namely the one which was originally third from the top.

Each card name has three words, ranging in length from the shortest, such as Ace of Clubs (ten letters in total), to the longest, such as Three of Diamonds (fifteen letters in total), and every number between ten and fifteen arises as a total count, giving the illusion of six different possibilities for the final outcome. Yet the beauty of it is that the noted card always ends up right in the middle of the packet, i.e., in fifth position from the top (and bottom)! It's an easy matter to extract that one, seemingly against all of the odds, with the packet behind your back.

Two important things to note:
The spelling and dropping proceeds for each word separately, and each spelling reverses the order of some of the cards. For instance, if the chosen card is $7\spadesuit$, the spectator spells out S-E-V-E-N while dealing five cards into a pile, drops the remaining (four) cards on top, then picks them all up again, before spelling O-F, dealing out two cards, then dropping the other seven on top, and then picks them all up again and finally spells C-L-U-B-S, dealing out five cards, before dropping the rest on top.

It's highly advisable to demonstrate this spelling and dropping technique first, before you turn away, with ten or more cards borrowed from the rest of the deck, and using a random card named. People are apt to get the directions wrong given half a chance. Also, not using nine cards in your run through makes it seem as if the number of cards used is irrelevant.

Once the dealing and dropping has been completed, turn around again and take the cards behind your back, stressing that you had no control over which cards were used, or which of those was chosen. Remind the audience that the names of the cards vary in length a great deal, from short ones with just ten letters total to long ones with fifteen. Meanwhile, locate the middle card, which is fifth from either end of the packet. Bring this forward, and ask what the chosen card was right before you turn it over.

It's a fun and elementary exercise to check that this always works. Stressing the variable length of the card names is pure misdirection: the individual word spellings/card reversals result in the chosen card being in the fifth position after just the first two of the three words (namely the suit and O-F) have been spelled and the remainder dropped on top; the third spelling does not disturb it because the suit name has at least five letters!

A standard gag for a repeat performance is to have the spectator deliberately lie about the name of the card while spelling. This strategy is a two edged-sword: while it tends to baffle a lay audience, it alerts a mathematically inclined one to the inherent invariance of the principle.

There are many ways to conceal the fact that the chosen card must start in the third position at the outset. For instance, one could have the top card chosen instead, then put the cards behind your back under some pretext, and then just transfer two cards from the bottom to the top before the dealing begins. Or you could have the packet dealt into three piles of three, and the bottom card of one pile noted, then making sure that pile ends up on top during reassembly.

Another possible strategy is to appear to allow for more audience input, e.g., ask two spectators to call out their "favourite numbers between one and nine." In our experience, there is a high probability that in response you will hear something you can work with, and also you can usually ignore one person's suggestion without causing offense or being called on it later. If you're lucky, you can use both suggestions. If "three" or "five" (or both) are mentioned, you have the perfect excuse to have somebody look at the third card at the outset, or later, instead of pulling out the noted card behind your back, to merely say, "Somebody said five earlier, please count to the firth card." That last count and discovery also works with "four"—have the spectator count off four cards and then look at the next one—and the same logic works for the initial selection with "two." With "seven," start by having seven cards from the packet dealt into a pile, and the seventh card noted before the last two are dropped on top, making it the third one down as desired.

A different approach is to take the packet of nine cards back and put it on the top of bottom of the rest of the deck and do some aggressive shuffling while keeping those nine cards in place and then shuffle off four cards from top to bottom or vice versa, leaving the noted card either exposed on the bottom (which you an peak at before really losing it in the deck), or on the top. In the first case you can mind read the card, or
rummage though the deck saying, "I bet your card will speak to me." In the second case you have several options, such as "making the chosen card rise."

Here's a fun mathematical exercise: prove that if \(k, s, t\) are positive whole numbers such that given \(k\) cards, the one in position \(s\) always ends up in position \(t\) when the above spelling and dropping technique is applied, then \(k = 9, s = 3\) and \(t = 5\). This trick is truly unique!

**Sun King**

"The King's Coronation" is the opening effect in Jim Steinmeyer's booklet *Further Impuzzibilities* (Hahne, 2006). It's based on the fact that if a certain type of spelling and discarding deal is done to a packet of four face-up Kings, initially alternating Red Black Red Black from the face, then the last card remaining is always the K♣. It's all based on the suit names and starting alternating arrangement, so it works with any card values.

Here's a summary of the deal as published by Steinmeyer: on each spell (there will be three of these) the suit of the face card (i.e., the top card when the packet is held face-up) is used to determine the number of cards transferred one by one from top to bottom. Unlike in Nine Card Speller above, the order of the cards is not reversed here! One card is moved for each letter in the suit name: hence, five for Clubs, six for Spades or Hearts, and eight for Diamonds. Then the resulting top card is discarded.

For instance, if the suits are ♥, ♦, ♠, ♣ from the face of the packet, the first word spelled is "hearts," and hence six cards are transferred from top to bottom, which puts the ♦ on top. Set it aside (preferably face-down) and continue: next five cards are transferred as "clubs" is spelled, this leads to the ♣ being on top. Set it aside face-down and continue: "clubs" being spelled leads to the ♥ being on top, now set it aside face-down and the ♠ remains. Note that the cards were discarded this time in the order ♠ ♥ ♦ ♣.

Regardless of which of the eight possible Red Black Red Black set-ups we start with, the &club; is "the last card standing". Even more surprisingly, as Steinmeyer observes, after two discards we are always left with the ♥ and ♠ (in some order) and furthermore we are free to switch the order of these—or have the spectator doing the trick do so—before the final spell and discard: no matter which of the ♥ or ♠ is on top, the ♥ will always be the next one to go, leaving the ♠ as desired.

**You Know My Name (Look Up The Number)**

If the three discarded cards are placed in a row from left to right as they are set aside, and the final card is placed to the right of these, then the resulting suit order is always ♦ ♣ ♥ ♠, no matter which starting arrangement we had. If they are placed in a face-down stack, which is then picked up and fanned face-up in the usual way, the suits appear in the popular CHaSeD order. Either incarnation allows for other surprising presentations, for instance jettisoning the Kings and using spot cards, and then having the last four digits of somebody's phone number turn up in order (use 10 to represent 0).

**The Mostly Promiscuous Principle**

As just noted, the cards are always set aside in order DSHC (which is CHaSeD backwards), so since the opposite of chaste in one sense is promiscuous, we might refer to this as the Promiscuous Principle.

It is natural to ask what happens when the cards start alternating Black Red Black Red instead of Red Black Red Black. It turns out that for the four possible arrangements of suits in this order, those which start with
the ♠ on top lead to less predictable results, and what is worse, it makes a difference if the last two cards are switched before the final spelling. On the other hand, for if the ♣ starts out on top, CDSH again leads to DSHC every time, whereas \textit{CHSD always leads to HSDC}. While this seems to suggest that we should stick with the original Steinmeyer setup, there is a way out. The idea is to throw in an additional spelling and transfer the beginning, at the end of which no card is discarded!

Note that if we start with Red Black Red Black, then spelling Diamonds and transferring eight cards restores the packet to its original order, and spelling Hearts and transferring six cards merely puts the Diamond on top, the cards still alternating Red Black Red Black.

Here's the good news, for Black Red Black Red arrangements starting with the Club, spelling Clubs and transferring five cards turns the packet into on which alternates Red Black Red Black. Steinmeyer will take care of the rest.

Finally, for Black Red Black Red arrangements starting with the Spade, spelling Spades and transferring six cards puts the Club on top. Which almost solves all of our problems...as remarked above, half of the time we'll end up with DSHC every time, and the other half of the time we'll end up with HSDC.

The conclusion is that with this additional "up-front" spelling and transferring (without discarding a card) almost all (seven out of eight in fact) alternating colour arrangements lead to a final card order of DSHC (The Mostly Promiscuous Principle), and every one of them leads to the final card being the Club.

Set the final Club aside in every single case, to be revealed at the end, and focus first on the other three cards, assuming they have been dealt into a face-down pile. These cards will generally be in the order DSH, and if not, which is revealed by picking that pile up and sneaking a peak at the bottom card, then it's a simple matter to present HSD as DSH, by fanning as mentioned earlier. Hence, even in the one case where "things go wrong," and we end up HSDC, all is not lost. \textit{Properly presented, every alternating set-up leads to total victory!}